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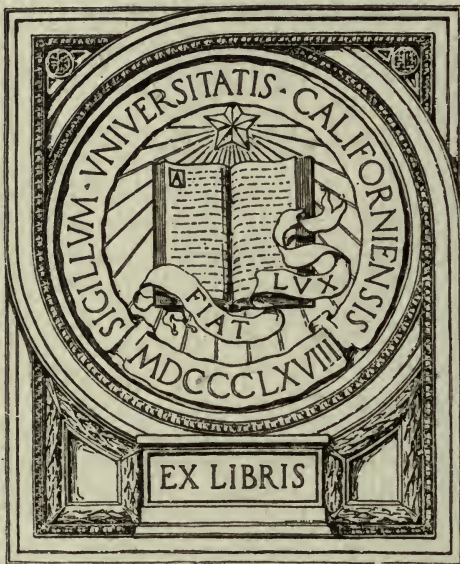
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State of S. Carolina



High School Manual

For Teachers

PREPARED BY

WILLIAM H. HAND
STATE HIGH SCHOOL INSPECTOR

ON THE AUTHORITY OF

THE STATE BOARD OF EDUCATION
OF SOUTH CAROLINA

1911



THE R. L. BRYAN COMPANY
COLUMBIA, S. C.
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INTRODUCTORY.

This Manual has been prepared by the State High School Inspector on the authority of the State Board of Education. It has been written with the cherished hope that it may be of some service to the high school teachers of the State, with whom the author has found it pleasant to labor for the upbuilding of the schools. The size of the volume forbids anything like a full discussion of the many topics mentioned in it, and precludes the discussion of many others altogether. The aim has been to make few definite suggestions on each topic, then to refer the teacher to some more exhaustive treatise. The making of long lists of reference books for either teachers or students has been carefully avoided. Lengthy bibliographies have marred the usefulness of many an otherwise good manual. Any teacher has it in his reach to improve himself by a close study of a few well-selected books on the matter and method of teaching.

I am glad to acknowledge the help that has been given to me by many teachers throughout the State. I have quoted from some of them liberally in places, because they had already said just what I wished to say, and had said it well.

W. H. H.

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THE AIM OF EDUCATION.

In the evolution of human society the aim of training men and women to perform their parts in that society into which they are born is undergoing constant change. Truly, this change is very gradual but it is none the less constant. Consequently, there must be gradual but constant readjusting of educational means to educational aims. "The value of any means can not be determined without a knowledge of the end to which it is a means." In the history of education, the student meets nothing more interesting or instructive than the unmistakable gradual changes wrought in the conceptions of the dominant aim in education, as expressed from time to time by those who have formulated contemporaneous definitions of education.

Perhaps it would be impossible to give any laconic definition of education that would be at all comprehensive. For the modern teacher in the secondary school the following statement of the aim seems to be meritorious. It is taken from Brown's *The American High School*:

"The aim of education is the harmonious development of the human powers for a life of service in the State and society, with due regard for the peculiar needs, inclinations, and abilities of the individual so far as his own happiness and his social efficiency are concerned. When the individual possesses both higher and lower powers equally capable of development, appeal should always be made to the higher. The end of education is not to make all men alike according to some preconceived ideal of the perfect man, but, on the basis of his inherited powers, to raise each person to his highest efficiency both as an individual and as a member of society. In more definite and concrete terms, this end may be said to include physical health and efficiency, manual skill, a large amount of information concerning man and nature, trained intellectual powers, an appreciation of the true, the good, and the beautiful, and an attitude of personal devotion to them, broad sympathies, and a desire and purpose to live the fullest possible human life both as an individual and as a member of society. In proportion to the degree in which a study contributes to these ends it may be said to have educational value."

EDUCATIONAL VALUES.

The secondary school forms perhaps the most important link in our American educational system. It should give tone to the elementary school, and it must give the preparation to the material for the institutions of higher learning. Besides, it is called upon to give a large number of sturdy men and forceful women the only preparation they are to have for intelligent citizenship, industrial efficiency, and social enjoyment. Naturally, an institution with so important a function deserves the heartiest support of the people and the most thoughtful study of the educator.

No bigger problem confronts the educator than that of weighing and determining educational values. This was once a very simple problem, but not so now. A few centuries ago, when the subjects recognized as fit material for training men for the two or three learned professions could be counted on the fingers of one hand, the problem was not difficult. All the recognized subjects could be taken by all pupils, hence a single curriculum was established. This single, narrow curriculum finally became a tradition, and no form of idolatry is more difficult to eradicate than that supported by the tradition of centuries. When new subjects began to be developed and organized, and to seek admission to the traditional curriculum, there arose a fierce conflict between the adherents to the old and the advocates of the new. As is usual in such cases, both sides made unwarranted claims for their respective groups of subjects. Out of the conflict came the doctrine of formal discipline, a theory which makes the nature and value of the content of a subject inferior to the mental discipline.

There is such a thing as mental discipline, but it must be admitted that in all educational literature there is no more indefinite or ambiguous or abused term than mental discipline, unless it is the term culture. These two terms are the last arguments of persons defending their pet theories. However, the question of mental discipline is one of too much import to be discussed in this little manual. The teacher is referred to Prof. Heck's *Mental Discipline*, a recent publication and an excellent treatise on the subject. Perhaps the best single article on the subject is by Dr. Hinsdale in Volume VIII.

page 128, of the Educational Review—*The Dogma of Formal Discipline*.

The report of the Committee of Ten (1893) did much to put this whole subject of educational values on a sane basis. Since the publication of that report educators have been studying the subject as never before. The notion that one subject is as valuable as any other subject to everybody is rejected. It follows that the notion that everyone to be educated must have studied certain traditional subjects must be rejected. President Schurman, of Cornell University, goes straight to the core of the matter when he says, "Education is not merely a training of mental powers; it is a process of nutrition; mind grows by what it feeds on, and the mental organism, like the physical organism, must have suitable and appropriate nourishment." Every educational subject has in it certain values and certain functions, and to determine these values and functions is the educator's difficult but imperative task. Why teach it? is asked concerning every subject. His program of studies taxes all his powers, and shows at once his knowledge of educational material, his knowledge of the needs of his pupils, and the capacities of his teachers.

The disciplinary value of any subject is largely a matter of the method and proficiency with which it is taught. Some of the subjects in our present program of studies are rated below par, simply because they are not taught long enough or well enough to reveal their intrinsic value.

For a full discussion of educational values, the teacher is referred to Hanus' *Educational Aims and Educational Values*, Bagley's *Educational Values*, and chapters I-IV of DeGarmo's *Principles of Secondary Education (The Studies)*.

PROGRAM OF STUDIES.

Considerable confusion has arisen among teachers themselves through the indefinite uses of the terms *course of study*, *curriculum*, and *program of studies*. In this manual, the terminology recommended by the College Entrance Requirement Board is used. A *program of studies* includes all the studies offered in a given school; a *curriculum* means the group of studies schematically arranged for any pupil or set of pupils; a *course of study* means the quantity of work given in any subject of instruction, for example, the course in mathematics embraces algebra, plane and solid geometry, and whatever other topic in mathematics might be offered.

It is conceded by all but a few that the secondary school with but a single curriculum is an anachronism. The secondary school of a single curriculum can not meet the needs of a people in a modern democracy. President Eliot well says, "The pretended democratic school with an inflexible program is fighting not only against nature, but against the interests of democratic society." The different conditions, situations, and occupations of the parents, and the various tastes, ambitions, opportunities, and limitations of the pupils preclude the possibility of meeting the needs of all pupils with any one curriculum. The time has past when the schoolmaster was the only one competent to judge of what is needed to educate a boy or a girl. The American father and mother know something of the meaning of education, and even the boy himself has some notions about his own powers and aims. Be these things as they may, the fathers and the mothers support the schools, and they are going to demand some latitude in the selection of studies. The Creator has endowed pupils with varied types of mind and various aims in life, and it is worse than folly for the schoolmaster to undertake to remold these with his curriculum. Thousands of capable pupils either do not enter the high school or leave it before graduation, because they ask for bread and are given a stone. Prof. Hecker aptly remarks, "No one study is fitted for every mind."

In order to meet this imperative demand for latitude in the selection of suitable subjects, there are at least two feasible ways open to every school: (1) two or more parallel curricula of equal value; or

(2) a single curriculum with several required subjects and some elective subjects. The elasticity suggested is worked out more fully in the paragraphs giving the details of the program of studies.

The high school subjects are usually classified under three group headings—the humanities, the natural sciences, and the economic sciences. Any curriculum in order to be well-balanced ought to have some representation from each of these groups. A curriculum made up entirely from the humanities would not only be unbalanced but narrow. The same would be true of a curriculum made up exclusively from the natural sciences.

After the topics have been selected for a curriculum, the articulation or arrangement of these topics becomes a problem. Shall physics or chemistry precede? Shall plane geometry be taken up before the completion of algebra, or shall it follow algebra? Where shall bookkeeping be placed? A man may be a good classroom teacher, yet unable to construct a well-balanced or a well-articulated curriculum. One who is unfamiliar with conditions as they exist in our high schools would doubtless be astonished, were he to examine fifty programs of studies from as many schools. He would see courses in English without any coherence, courses in mathematics innocent of any suspicion of articulation, courses in history violating every known pedagogical law.

The time allotments in the curriculum and in the daily schedule of recitations are vitally important. One loses faith in the judgment of a teacher who deliberately plans to give three full years, or twenty-seven weeks, to the study of school algebra, then brushes aside physical geography with three recitations a week, or fewer, for nine months. Some three-year high schools do not offer more than two years of good English, while they devote three years to Latin, two years to arithmetic, three to algebra, and one to geometry. Many three-year schools offer no science whatever, but run off after some high-sounding subject to tickle the fancy of patrons and pupils.

A high school curriculum may have a clear-cut purpose, or it may be vague and aimless; it may be rich in the content of its subjects, or it may have about it every mark of poverty; it may be strong in its articulation and sequence of subjects, or it may be disjointed and scrappy; the arrangement of the work may be smooth, resembling a gentle ascent, or it may be irregular, resembling a rugged mountain side; finally, it may be a well graduated road leading from the begin-

ning of the first year's work to the end of the last year's work, or it may be a circular path in which pupils after three or four years find themselves face to face with the same objects they met the first week in the high school.

The following four-year program of studies was prepared by a committee appointed at the request of the high school teachers of the State at a meeting in Columbia in 1910. The committee consisted of E. S. Dreher, Superintendent of Columbia City Schools; S. H. Edmunds, Superintendent Sumter City Schools; Frank Evans, Superintendent Spartanburg City Schools; O. M. Mitchell, Principal Rome High School; W. K. Tate, State Supervisor Rural Elementary Schools; and W. H. Hand, State High School Inspector. This report has been accepted by the State Board of Education as the basis of the high school curricula of the State.

The subjects printed in light-face type represent the *constants*, that is, the subjects common to all the curricula; the subjects printed in bold-face type represent those which differentiate the curricula,

FOUR-YEAR PROGRAM OF STUDIES.

CLASSICAL.*

I.	Periods
Arithmetic	3
Algebra	5
English—Gram., 3; Lit., 2....	5
History—Greece & Rome.....	5
Latin	5

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23

II.

Arithmetic†	2
Algebra	5
English—Gram., 2; Lit., 3....	5
History—Medieval & Mod....	5
Latin	5

—
22

III.

English—Comp. & Rhet., 3; Lit., 2.....	5
History—English	4
Geometry—Plane	5
Latin	5
Greek	4

—
23

IV.

English—Lit., 3; Adv. Gram., 2..	5
History—American & Civics....	5
Sol. Geom., 5 Mos.; Adv. Alg., 4 mos.	5
Latin	5
Greek	4

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24

SCIENTIFIC.

I.	Periods
Arithmetic	3
Algebra	5
English—Gram., 3; Lit., 2....	5
History—Greece & Rome.....	5
Physiology or Botany.....	5

—
23

II.

Arithmetic	2
Algebra	5
English—Gram., 2; Lit., 3....	5
History—Med. & Mod.....	5
Physical Geography	5

—
22

III.

English—Comp. & Rhet., 3; Lit., 2.....	5
History—English	4
Geometry—Plane	5
Physics	5
(Elective)	4

—
23

IV.

English—Lit., 3; Adv. Gram., 2..	5
History—American & Civics....	5
Sol. Geom., 5 mos.; Adv. Alg., 4 mos.	5
Chemistry	5
(Elective)	4

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24

*For Modern Language curriculum substitute French or German for Greek in third and fourth years.

†See minority report of Mr. Evans under the discussion of arithmetic.

COMMERCIAL.

I.	Periods
Arithmetic	3
Algebra	5
English—Gram., 3; Lit., 2.....	5
History—Greece & Rome.....	5
Physiology or Botany.....	5

—
23**II.**

Commercial Arithmetic.....	5
Algebra	5
English—Gram., 2; Lit., 3.....	5
History—Med. and Mod.....	5
(Elective)	2
	—
	22

III.

English—Comp. & Rhet., 3; Lit., 2.....	5
History—English	4
Geometry—Plane	5
Com. Geog. & Com. Law.....	5
Stenography & Typewriting.....	4

—
23**IV.**

English—Lit., 3; Adv. Gram., 2..	5
History—Amer. & Civics.....	5
Stenography & Typewriting.....	4
Bookkeeping	5
Elementary Economics.....	5

—
24**AGRICULTURAL.**

I.	Periods
Arithmetic	3
Algebra	5
English—Gram., 3; Lit., 2.....	5
History—Greece & Rome.....	5
Botany & School Gardening	5

—
23**II.**

Farm Arithmetic & Farm Ac- counts	4
Algebra	5
English—Gram., 2; Lit., 3.....	5
History—Med. and Mod.....	5
Physiology, Hygiene & Sanita- tion	3

—
22**III.**

English—Comp. & Rhet., 3; Lit., 2.....	5
History—English	4
Geometry—Plane	5
Physics (adapted to farm).....	5
Animal Industry & Dairying...	4

—
23**IV.**

English—Lit., 3; Adv. Gram., 2..	5
History—Amer. & Civics.....	5
Chemistry (adapted to farm)....	5
Soils, Fertility, Cultivation.....	5
(Elective)	4

—
24

The above program of studies provides for five curricula—classical, modern language, scientific, commercial, and agricultural. It will be noted that the English, history, algebra, and plane geometry are identical in all five. Each curriculum calls for 92 recitations a week.

Six 45-minute recitation periods and 30 minutes for one or two recesses consume all the time between 9 o'clock a. m. and 2 o'clock p. m. Between 9 o'clock a. m. and 3:30 p. m. seven 45-minute recitation periods and one and one-fourth hours for lunch and recess can be arranged.

With seven periods a day, three teachers could handle any one of the above curricula, and have jointly 13 open periods a week. The classical curriculum and the modern language curriculum combined call for 102 recitation periods a week. Allowing but 3 open periods a week, three teachers could handle both these curricula. This, however, would be found very heavy work.

The classical curriculum and the required subjects in the scientific curriculum combined require 112 recitations a week. With seven periods a day, four teachers could handle both curricula, and have jointly 28 open periods; or, with six periods a day, four teachers could handle both curricula, and have 8 open periods. The pupils of the third and fourth years might elect Latin or Greek, already provided for in the classical curriculum, thus reducing the maximum required recitation periods.

The classical, modern language, and scientific curricula combined call for 130 periods a week. With seven periods a day, four teachers could handle the three curricula, and have jointly 10 open periods.

All these calculations are based upon the supposition that none of the classes will be large enough to require more than one section in any subject.

If the pupils have come to the high school prepared to do high school work, and are given good teaching with 45-minute periods, it is altogether possible for a class pursuing the classical, modern language, or scientific curriculum to make a credit of over 15 standard units.

THREE-YEAR PROGRAM.**(Seven 45-Minute Recitation Periods a Day.)**

I.		Periods
Arithmetic		3
Algebra		5
English—Grammar, 3; Literature, 2.....		5
History—Greece & Rome.....		5
Latin.....	} (elect one).....	5
Physiology.....		
Botany.....		
		—
		23
II.		
Arithmetic		2
Algebra		5
English—Grammar, 2; Literature, 3.....		5
History—English		4
Latin.....	} (elect one).....	5
Physical Geography....		
Commercial Geography. }		
		—
		21
III.		
English—Comp. & Rhet., 3; Lit., 2.....		5
History—American & Civics.....		5
Geometry—Plane		5
Latin.....	} (elect one).....	5
Physics.....		
		—
		20

This program provides for a minimum of 64 recitations a week. With seven periods a day, two teachers can handle it, and have jointly 6 open periods a week. A school might offer six subjects in the first year, six in the second, and five in the third, thus providing two curricula. In that case the two would call for 79 periods a week. Two teachers with the half time of a third teacher could easily handle both.

ONE-TEACHER PROGRAM.

(Ten 30-Minute Recitation Periods a Day.)

I.		Periods
Arithmetic		3
Algebra		5
English—Grammar, 3; Literature, 2.....		5
History—Greece & Rome.....		5
Latin.....	} (elect one).....	5
Physiology.....		
		—
		23
II.		
Arithmetic		2
Algebra		5
English—Grammar, 2; Literature, 3.....		5
History—American & Civics.....		5
Latin.....	} (elect one).....	5
Physical Geography....		
		—
		22

This program provides for 5 open periods. Every teacher in such a school will find need of even more than these in which to bring up pupils deficient in one or more subjects. With 30-minute periods, even where the school runs nine months, it would be useless for the teacher to hope to cover the same ground covered in schools with 45-minute periods. In a school running but eight months, even less should be attempted. It will be found difficult to get beyond quadratics in algebra in the two years. Collar & Daniell's *First Year Latin*, including the Selections for Reading, will give the class good work. Not all the text can be done in the history of either year, nor all the physical geography, if the work is properly done.

SUGGESTIONS TO TEACHERS.

1. Whether you have a single curriculum, with or without electives, or several curricula, do not overcrowd your pupils with work. The bane of our schools is attempting to do too many things at one time. It ought to be evident that no high school class, under any consideration, ought to carry more than five subjects at a time. The drift of opinion among thoughtful educators is decidedly toward four subjects at a time in the high school. A few subjects well distributed and pursued vigorously will give far better results than a dissipation of time and energy over a large number of subjects half-taught and half-learned.

2. Whatever the nature of your program of studies, make some provision for taking care alike of the normal pupil, the brilliant pupil, and the slow pupil unable to keep up with a full allotment of subjects. This ought to be no difficult task. Suppose you have a single three-year curriculum with four required subjects and one elective or one optional subject. In either case let the slow pupil take each year one subject fewer than the minimum requirement until he works up the curriculum. Under the same plan, let the brilliant pupil take one subject more than the minimum requirement. Do not be afraid of having some pupils doing more work than others; some are more capable than others. Besides, it is unjust to be dragging the slower pupils over work too rapidly, and at the same time holding back the normal pupils and dulling the brighter ones.

3. Do not undertake the impossible, thinking that you can do what nobody else has succeeded in doing. Not fewer than three teachers can properly handle a single curriculum of four years. It is barely possible for two teachers to handle a curriculum of three years. One teacher can not properly handle more than a single curriculum of two years. If you have any doubt about the accuracy of these statements, do a little calculating and be convinced.

4. Some teachers are capable of doing far more effective work than others, but it is presumption for one teacher to undertake to accomplish as much work in a given time as two teachers can accomplish, or for two teachers to attempt the work of three teachers. Do not try to make people believe that you have some patented process

by which you can accomplish more than ordinary mortals. Teachers and schools arrogating to themselves extravagant superiority are usually heavily discounted by well-informed people.

5. Do not attempt to make yourself or your pupils believe that you are gaining anything when you carry two subjects at a time and alternate the recitations, instead of carrying one at a time with daily recitations. Between two given points there is no shorter cut than a straight line. You may be able to have two classes at work at the same time. Indeed, the teacher's task is to have all classes profitably at work all the time, but do not imagine that you can teach two classes at the same time. The most competent teachers are fully satisfied with being able to teach one class at a time. A carpenter who would claim to be able to bore holes and to push a plane at the same time would be regarded as a freak rather than a finished workman.

6. Remember that there is a limit to the endurance of teachers as well as of pupils. A fatigued brain refuses to be clear and alert, and teachers are not steam engines. No high school teacher can do high-class recitation work continuously for five hours without some relief. It is exceedingly unfortunate to be compelled to keep a teacher on scheduled recitations every period in the day. A change from the tension of the recitation to passing among pupils and directing their work will give relief.

7. I am convinced that our school day is projected on wrong principles. We open at 8:30 or 9 o'clock and run at high tension until about 2 o'clock, with not more than 30 minutes for one or two recesses. By the hour of closing everybody is exhausted, nervous, and irritable. It would be far better for both teachers and pupils to make the school day longer and to give more time for relaxation and recuperation. The actual teaching hours need not be lengthened more than perhaps a half hour, but the work of the day would be better distributed, the work less fatiguing, and the character of it improved, because more of it would be done under the immediate guidance of the teacher. A school day from 9 o'clock until 3:30 with an hour and a quarter for lunch and recuperation would add much to the health and comfort of the pupils. With entirely good reason, parents have long complained that they must do at least a good part of the teaching of their children, while the teachers at school hear the recitations. The corrective for all this is simple:

Make the school day longer, let the teachers do the teaching, and make the lunch hour at home meet the needs of the pupils. The children are due some consideration at home as well as at school.

8. Make a workable daily schedule and follow it. If the one you have is not a good one, make one that is good, then follow it. A good school schedule is as necessary as a good railroad schedule, and for the same reason—a protection against wrecks. For any teacher to conduct his recitations in a haphazard order, or in an indefinite period of time, is sure to end in confusion, if not failure.

9. In a high school of two or more teachers, 45-minute recitation periods are recommended. Of course, a few of the recitations may require less time, but it should be remembered that the drill work on the recitation is what counts for most in high school teaching. In a one-teacher high school, 30-minute recitations are recommended wherever possible. With very small classes it may be necessary to reduce a few of the recitations to shorter time. Anything less than 20 minutes is not worth while. Again, remember that one teacher can not hope to do the work of two, or to do in 30 minutes what another teacher in similar circumstances does in 45 minutes.

10. Teachers are urged not to advance pupils to the high school before they are prepared to do the work there. To do so is an injustice to the pupils, and a source of constant annoyance to the teacher and to the pupils who are prepared. Premature promotion is wholly inexcusable where the high school principal is also supervising principal of the common school.

11. No matter how many curricula the school may offer, or how well the school may be equipped in the way of conveniences, the effectiveness of the school depends chiefly upon the efficiency of its teachers. To teach well the teacher must first be more than a pedagogue. In addition, he must know both his subject and his pupil. Unless he can teach his subject without an open book constantly in his hand, he will fail; and unless he knows his pupil and how to bring him to the subject as well as to bring the subject to the pupil, success is doubtful. The teacher's business is to reduce the subject and the learner to a common denominator, so to speak.

12. It is utterly useless for a dull, phlegmatic teacher, without a particle of genuine enthusiasm, to hope to inspire pupils with any genuine zeal for their work. When a teacher complains that an entire class is lacking in spirit and doing no work, he is giving

himself a very poor recommendation. Whose business is it to discover the cause of the trouble and a remedy? Whose business is it to inspire pupils? On the other hand, do not coddle and cajole pupils into spasmodic spirits at study, then imagine that you are giving them any real inspiration. Enthusiasm to be permanent must be real. High school pupils generally know when they are making substantial headway in their work. The late Dr. Carlisle said that a class of ideal students might find themselves sadly in need of an ideal teacher.

13. In high school work it is a saving of time and energy to divide the work among the teachers by subjects instead of by grades. Any teacher can better handle two or three subjects than the subjects of an entire grade. A teacher may be strong in some subjects but weak in others. Give each teacher such subjects as he is best equipped to teach. The teaching itself will be better correlated. To illustrate, where the English of the entire high school is taught by one teacher there will certainly be more continuity in the work, than where it is taught by different teachers. However, there is one danger to be avoided—that of overworking pupils because each teacher over-emphasizes his particular subject.

14. Not a few pedagogical crimes are committed in the name of thoroughness. Do not wear a subject threadbare by droning over it to the disgust of the pupils. On the other hand, do not skim through a subject touching it in high places, with the understanding that it is to be reviewed. Pupils soon come to expect all subjects to be reviewed, and never take any study seriously. To go over any book or subject several times invites the habit of careless study. Train the pupils to master a subject as they go, and to make use of it when they have learned it. Let them understand that they are expected to do a thing thoroughly, if the thing is worth doing at all.

15. Teachers are urged to shun all manner of crotchets. Many a man has mistaken a crotchet for genius. Do not subject yourself to being regarded as a "spelling crank," or an "arithmetic crank," or a "history hobby-rider," or a *faddist* of any kind. Any teacher loses force and impairs his usefulness whenever he loses his balance and becomes a monomaniac. Nothing becomes a teacher better than poise.

16. Do not permit yourself to get into a rut. Do not conclude that the last word has been uttered on any subject. Keep your eyes open, your mind open, and your heart warm. By so doing, you will see more clearly, think more vigorously, and feel more sympathetically.

Helpful Books.

Among the books helpful to high school principals and teachers in the organization and administration of their work are these:

Report of the Committee of Ten. American Book Co. \$0.30.

Brown's *The American High School.* Macmillan. \$1.40.

Hollister's *High School Administration.* Heath.

DeGarmo's *Principles of Secondary Education.* Macmillan.
\$1.25.

Davenport's *Education for Efficiency.* Heath. \$0.80.

Heck's *Mental Discipline.* John Lane.

Ruediger's *The Principles of Education.* Houghton, Mifflin Co.

ENGLISH.

It would seem scarcely necessary to offer any argument for the diligent and prolonged study of English in the secondary schools of America. Yet, a respectable number of reputable teachers have long insisted on teaching the principles of English through some foreign language, often through a dead language. Not a few others would leave pupils to absorb vicariously a knowledge of English from other school subjects. However, the value of a painstaking study of the mother-speech has come to be generally recognized among all thoughtful people.

Perhaps no other high school subject is at once so rich in content and disciplinary value. Much of the world's best thought and richest experiences is preserved in the language of English-speaking peoples. The treasures of history, biography, science, philosophy, art, and pure literature await the diligence of the student of English. Richness of vocabulary, variety of diction, and flexibility of syntax combine to make the study of English inferior to that of no other language as a disciplinary subject. Prof. F. C. Woodward boldly asserts that "English asks no odds of the classics, even in a comparison of respective disciplinary values." The growth, development, and adaptability of the English language are little less than marvelous. English has not hesitated to lay tribute upon the best to be found in both ancient and modern languages, and has made possibly the nearest approach to a world language.

It is not to be denied that there are some difficulties in teaching English, and that it is taught less satisfactorily than most other high school subjects. A living language must be a growing one—continually taking on new words, new idioms, and new adaptations; at the same time it is continually casting off what has become obsolete. Therefore, a living language presents some difficulties not found in teaching a dead language, fixed in its vocabulary and syntax. Again, a language of few inflections can not be taught in the same way in which a highly inflected language may be taught. Just here has been met one of the most serious difficulties, but it is being rapidly overcome by well-trained teachers. To these inherent difficulties in teaching English, must be added the indefinite aim that marks

the work of many teachers. Most teachers do not exhibit a clear-cut and well-defined purpose in teaching it. Often the work of a given day or week shows no organic relation to that of the entire year, and the work of a given year lacks articulation with the entire course. The secondary importance attached to the subject itself is largely responsible for the delay in the development of methods of teaching it. The teaching of a vernacular is further hindered by the consciousness on the part of both teacher and pupil that in some way everyone can manage to make himself understood by his fellows. After all, the teacher of English oftenest meets his Waterloo in attempting to overcome the slang of the street, the colloquialisms of the home, and the barbarisms of the newspapers with such weapons as grammar, rhetoric, and handbooks of literature.

In chapter II of Chubb's *The Teaching of English*, the author discusses some of the difficulties besetting the schools in teaching English. In that discussion he makes the following pointed observations:

"The fundamental fact to be borne in mind in this connection is that good speech is a habit, a point of social manners. It is, we urge, too much to expect that the habits enforced for a few hours daily in the schoolroom (Saturdays and Sundays and holidays and long vacations excepted) shall prevail against contrary influences affecting the child during the greater part of his daily life. Why is it that the average English or German or French child speaks and writes his native tongue more correctly and pleasantly than the average American child? The principal (though not the only) reason is to be found, not in the better and more laborious teaching in the schools, but in the higher standard of social manners. We lack linguistic conscience and linguistic pride in this country. We do not attach to illiteracy the stigma that attaches to it abroad—a stigma that money, dress, ostentation, can not atone for. Until with us also to be a gentleman is, as a first essential, to use gentle speech, we shall not cure, we shall but cauterize, illiteracy. Hence it is that, viewed in its large aspects, the problem of illiteracy is not so much a school problem as a problem of American civilization."

GRAMMAR.

Around no other subject have more unprofitable discussions clustered than around English grammar. One set of controversialists has claimed for grammar almost everything; another set has inveighed against it; still another set has declared that the English language has no grammar. Lindley Murray defined grammar as teaching the "art of speaking and writing the English language with propriety." Grammar came to be looked upon as the panacea for linguistic ills; pupils were set to work memorizing abstract definitions, learning rules not applicable to English at all, and devoting much time to parsing page after page of *Paradise Lost*. After all, the results were sadly disappointing. What was to be expected took place, a reaction came. Prof. Baker, of Columbia University, puts the matter forcefully. He says:

"There was for many years a reaction against the study of English grammar. This reaction seems to have been the result of several causes: (1) The instruction was begun too early, and was therefore both meaningless and over-difficult; (2) The treatment was made mechanical to the point of degenerating into mere rote-work; (3) There was a growing recognition that much of the subject was not in reality English grammar at all, but Latin grammar badly fitted to the English; (4) The claim commonly made for the study, that it led to the correct use of English, was entirely contradicted by facts, since many good students of grammar used bad English, and many who knew no grammar used good English."

The reaction against grammar was justifiable, and out of the conflict have come a clearer conception of the aim of grammar, a better agreement as to its place in the curriculum, the evolution of better methods of teaching it, and the appearance of an improved type of textbook. The most important of these is the better defined aim, important in itself and in determining the other three. This clearer conception of the aim of grammar has strengthened its claim to an important place in the curriculum. To be sure, "We no longer attempt to teach correctness of expression by means of grammar," but a knowledge of grammar enables the student to test the accuracy of his own speech and to recognize correct speech anywhere. Mr. Chubb thus summarizes the present conception of the aim:

(1) We have finally abandoned the old view, which regarded grammar as the art of correct speaking and writing, in favor of the

view that grammar is the science underlying that art,—a knowledge of which aids the art, and is involved in the conscious elaboration of its principles and technique. An art, however, is taught by practice; and the main pedagogical factor in it is imitation.

(2) We are freeing ourselves from the tyranny of Latin models, and are substituting a grammar that deals simply with the actual facts of the English tongue, and recognizes how widely it differs from a highly inflected tongue like Latin.

(3) We have come to recognize the necessity of following a different method, for insuring a conscious mastery of our native tongue, from that employed in mastering a foreign tongue. In the one case the method must be mainly inductive and analytic; in the other, mainly deductive and synthetic. In the one case we are systematizing and rationalizing the data in our possession; in the other, using the rules that are the outcome of systematization, as short cuts to the facts.

The business of grammar is to record standard usage, but not to dictate usage. The systematized data—the forms, inflections, syntax, sentence-structure, and word-order—constitute a court of appeal, so to speak, to the student in determining standard usage.

At present elementary grammar is begun early in the grades. By the time the student has reached the high school, he has become fairly familiar with the simpler terminology of grammar, with most of the forms, and with the analysis of simple sentences. In this connection, Mr. Chubb makes this happy statement: "There is no apocalyptic moment when the child emerges into the sphere of grammatical consciousness. He begins to be a grammarian just as soon as he begins to deal with language in a reflective, analytical manner."

It would be difficult to undertake to say just how much grammar the student should have on entering the high school. On pages 150 and 151 of Carpenter, Baker & Scott's *The Teaching of English*, and on pages 225-232 of Chubb's *The Teaching of English*, are found rather full and specific suggestions as to the quantity and character of the grammar work to be done in the elementary school. The teacher must remember that in both these books eight years are given to the elementary school course. The teachers of South Carolina can not hope to do in seven years what the teachers of other places accomplish in eight years.

For the English grammar work in the high school a few suggestions are offered:

1. Do not play with the subject in a merely superficial way, but attack it with zeal, vigor, and determination. Nothing short of unceasing and well directed efforts will give satisfactory results. I can offer here nothing better than a quotation from Dr. H. N. Snyder: "I believe that there must be an unremitting drill in theoretical and practical grammar. I count the disrepute into which grammatical drill has fallen in our secondary schools a distinct loss, for which superficial flower-peeping and nature-faking are far from being compensatory absorptions of the time of the pupil."

2. A total of not less than one year's work, with daily recitations of 45 minutes each, should be given to a rigorous study of high school grammar. Less than a year given to a text like Buehler's *Modern English Grammar*, one of the State adopted high school books, is wholly inadequate. As indicated in the program of studies in this manual, it is thought better to let the study of grammar extend over two years, with fewer than daily recitations, than to confine it to one year. Besides, grammar study should never proceed alone. It should never be divorced from the study of composition and literature.

3. Part I and chapters I and II of Part II of Buehler's Grammar furnish ample material for the work of one year of nine months, with three recitations a week. The remainder of Part II furnishes enough work for the second year, with two recitations a week. Schools running less than nine months a year can not do effective work and cover the book in the manner just outlined. Nor can schools with 20-minute, or even 30-minute, periods hope to do good work and cover the text in nine months.

4. Part I of Buehler's Grammar deals exclusively with the Sentence; Part II deals with the Parts of Speech. It will be noted that this is the same order followed in the preceding book, Kinard & Withers' *The English Language, Book Two*. Dr. Patterson Wardlaw says, "Grammar is essentially the study (1) of the thought of the sentence (analysis), and (2) of the means used to convey that thought (parsing and inflection). The emphasis due to any piece of grammar depends upon how much it helps towards these two ends. Analysis, then, is the condition of all the rest. Let it be *thought-analysis*. Since the purpose of the sentence is to express

thought, the sole business of analysis is to discover how each part contributes to that end."

5. In the analysis of the sentence, no more helpful guide to the teacher can be suggested than Dalgleish's *Grammatical Analysis*. The method is very simple yet severely logical, and the illustrative sentences are excellent. Dr. Edward S. Joynes has published a helpful pamphlet entitled *Notes of Lectures on the Parts of Speech in English and the Study of English Grammar*. On pages 51 and 52 of this pamphlet, he gives a simple but comprehensive scheme for analysis and parsing.

6. In analyzing sentences, drill students on the co-ordinate and subordinate relations of clauses. Students often fail to see that two clauses each may be subordinate to a third clause and at the same time co-ordinate with each other. Greater still is the difficulty in seeing how a clause may be subordinate to one itself subordinate to a third clause. Such a failure on the part of the student frequently renders a sentence meaningless to him, or he gets an erroneous meaning from it.

7. Terminology in grammar is no insignificant matter to the young student. To find the same thing called by two terms, or to find the same term applied to two different things, is, to say the least, an unnecessary burden to the student. Many a high school student is in hopeless confusion over the uses of such terms as—

principal clause, principal sentence, independent clause, independent sentence;

dependent clause, dependent sentence, subordinate clause, subordinate sentence, substantive clause, attributive clause.

Dr. Reed Smith has kindly prepared for this manual the excellent note and

Table of Differing Usage in Grammatical Nomenclature
in

Kinard & Withers' *The English Language, Book II*;

Buehler's *A Modern English Grammar*;

Setzler's *An Introduction to Advanced English Syntax*.

Both in Europe and America there has recently come about a wide-spread sense of the need for harmonizing and unifying the varying systems of grammatical nomenclature. In France, as the result of four years' work by a French Committee of Fifteen, the

Minister of Public Instruction issued September 28, 1910, an official *New Grammatical Nomenclature*. An English Joint Committee upon Grammatical Terminology, appointed in October, 1908, reported in 1910 upon a terminology for English, German, French, Latin, and Greek. In May, 1910, a paper on *Simplification of Grammatical Terminology* was presented before the Modern Philological Association of Germany at Zurich. In this country Professor William Gardner Hale, of Chicago University, and Professor C. R. Rounds, of the State Normal School in Whitewater, Wisconsin, have produced articles respectively upon *The Waste Involved in the Use of a Conflicting Terminology in School Grammars of Various Languages* and *The Varying Systems of Nomenclature in Use in our Texts in English Grammar*.

In a more recent article (*The Harmonizing of Grammatical Nomenclature, with Especial Reference to Mood-Syntax*, Publications of the Modern Language Association of America, June, 1911, pp. 380, 381.) Professor Hale writes as follows of the situation in America:

"The present state of affairs, at any rate, is bad. . . . So great a variation of terminology has no where else come into existence as in the grammar of our mother tongue. The result is confusing to the student as he changes books in passing from year to year, or perhaps from school to school. It is confusing even to the teacher, since he often has to deal with a number of students trained to a different terminology from that of the rest of the class, or even to change his own terminology as one publishing house after another gets the upper hand in the struggle for the sale of books."

The condition of affairs in South Carolina, while no worse than elsewhere, is an example of the situation described by Professor Hale. The three textbooks in English grammar and syntax adopted by the South Carolina Board of Education are *The English Language*, Kinard & Withers; *A Modern English Grammar*, Buehler; *An Introduction to Advanced English Syntax*, Setzler. The terminologies of these books certainly differ no more, perhaps less, than those of average grammars. Enough differences do exist, however, to warrant calling attention to them. The following table of varying usages in grammatical nomenclature is accordingly offered as an aid to South Carolina teachers of grammar.

Differences are alone noted. Figures refer to pages. Citations from *The English Language*, Kinard & Withers, are from Book Two.

THE SENTENCE.

Kinard & Withers.

Declarative Sentence (2).

Noun Clause (55ff).

A sentence that contains two or more principal clauses is called a **compound sentence**.

Any member of a compound sentence may contain one or more subordinate clauses. (58.)

Buehler.

Assertive Sentence (18).

Substantive Clause (84ff).

A sentence consisting of several independent or co-ordinate sentences joined together is called a **compound sentence**. The independent sentences joined together may themselves be complex. (98.)

THE PARTS OF SPEECH.

Kinard & Withers.

Nouns
Pronouns
Verbs
Adjectives
Adverbs
Prepositions
Conjunctions
Interjections
(19)

Buehler.

Nouns
Pronouns
Adjectives
Articles
Verbs
Adverbs
Prepositions
Conjunctions
Interjections
(138)

Setzler.

Nouns
Pronouns
Verbs
Adjectives
Adverbs
Prepositions
Conjunctions
Expletives
Interjections
(15-17)

NOUNS.

Kinard & Withers.

Subjective Complement
(39, 78)

Nominative of Address
(78)

Adverbial Objective
(82)

Indirect Object
(84)

Buehler.

Attribute Complement
(50, 166)

("Often called **Predicative noun or predicate nominative**")
Nominative ("Often called **nominative of address**") (166)

Adverbial Modifier ("Often called **Adverbial objective**") (166)

Indirect Object
(166)

Setzler.

Appositive to Subject
(58)

("or **attribute complement or predicate nominative**")

Nominative of Direct Address. (58)

Objective Case as the measure of time, space, quantity, or number (or adverbial objective)
(62, 63)

Dative Case (case of indirect object) (60)

PRONOUNS.

It Grammatical Sub-ject (92)	It Expletive (28, 176)	It Expletive (150)
I Personal	I Personal	I Personal
II Interrogative	II Demonstrative	II Relative
III Relative	III Interrogative	III Interrogative
IV Adjective	IV Relative	IV Demonstrative
1 Demonstrative	V Indefinite	V Distributive
2 Indefinite (87ff)	(171ff)	VI Reciprocal
My	Possessive Case	VII Numeral
Our	(172-175)	VIII Indefinite (28)
Your	} Possessive Case (89, 89)	Possessive Adjectives (32, 68 note)
Her		
Their		

ADJECTIVES.

Kinard & Withers.	Buehler.	Setzler.
Subjective Complement (41)	Attribute Complement (50)	Predicate Adjective (147)
I Descriptive	I Descriptive	I Quality
		1 Participial
		2 Non-Participial
II Limiting	II Limiting	II Non-Quality
1 Numeral	A Numeral	1 Quantity
2 Demonstrative	B Pronominal	2 Numeral
3 Interrogative	1 Demonstrative	3 Pronominal
4 Indefinite (115)	2 Interrogative	(a) Possessive
	3 Indefinite (207)	(b) Relative
		(c) Interrogative
		(d) Demonstrative
		(e) Distributive
		(f) Indefinite (30ff)

VERBS.

Present (he writes) (126)	Present (232)	Present-Simple
Past (he wrote) (126)	Past (232)	Past-Simple
Future (he will write) (130)	Future (233)	Future-Simple
Present perfect (he has written) (131)	Present Perfect (234)	Present-Perfect
Past Perfect (he had written) (131)	Past Perfect (234)	Past-Perfect
Future Perfect (he will have written) (131)	Future Perfect (234)	Future-Perfect
Present Progressive (he is writing) (140)	Present Progressive (235)	Present-Imperfect
Past Progressive (he was writing) (140)	Past Progressive (235)	Past-Imperfect
Future Progressive (he will be writing) (140)	Future Progressive (235)	Future-Imperfect (92)
Indicative Mode	Indicative Mode	Indicative Mood (112)
Subjunctive Mode	Subjunctive Mode	Subjunctive Mood (112ff)
Imperative Mode (133)	Imperative Mode (247)	Imperative Mood (131)
Infinitive in -ing (147)	Infinitive in -ing (129, 258)	Infinitive Mood (132) Participial Mood (135) Gerundial Infinitive or Gerund (134)

PARTICIPIAL TENSES.

Present (writing)	Present	Imperfect
Past (written)	Past	Simple
Perfect (having written) (153)	Perfect (263)	Perfect (136)

ADVERBS.

There Introductory Adverb (172)	Expletive (29)	Expletive (150)
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CONJUNCTION.

Co-ordinating	Co-ordinating	Co-ordinate
Subordinating (179)	Subordinating (284)	Subordinate (41)

8. Do not confine your work in analysis to the sentences given in the text. Students should feel that their grammar work is actually reaching out beyond the textbook. Besides, after any text has been in use in a school more than a year or two, most of the difficult

places have been annotated by the pupils of the preceding classes. Instead of looking to the text for all your illustrative sentences, gather some of the best from the other texts used by the class. The literature, the history, and the arithmetic texts will furnish some excellent material. The interpretation of a sentence in history or a problem in arithmetic is simply getting at the logic of it—the grammar of the thing.

9. To give false syntax to pupils to correct in order to teach them correct syntax is of more than doubtful wisdom. At best, most students are already too familiar with false syntax. To hope to teach good English to students by setting them to correct bad English is but little better than to expect to teach men sobriety by intoxicating them occasionally. Moreover, when the average student is asked to correct sentences, he makes his corrections by making changes. This suggestion has no reference to bad diction unconsciously used by the student. Because he is unconscious of his errors, he must be made conscious of them and have the corrections constantly kept before him, until he forms correct habits of speech.

10. Do not take fright at a diagram; on the other hand, be careful not to overwork it. It should be used merely as a means to picture the relations of the parts of a sentence to the eye. It seems to me a teacher's tool rather than a student's tool. The teacher sees these relations, and uses the diagram to show them to the student. If the student sees these relations, he needs no diagram; if he does not see them, how can he use the diagram to picture what he does not see?

11. Parsing is a much more difficult exercise than analysis. To label and classify all the words of an intricate sentence require careful discrimination and good judgment. Such training is valuable, to be sure, but it is not the one thing indispensable. It is not profitable to spend day after day parsing sentences word by word; life is too short and the profits too meager.

12. In both analysis and parsing, get rid of as much *impedimenta* as possible. In both exercises much valuable time is wasted in dealing with things that encumber rather than aid. The grammars teach us that analysis is pure logic, and proceed to separate a simple sentence into its logical parts, the subject and the predicate, and to define each. Then before we get the definitions fairly fixed in our minds, we are told that such a sentence has a *logical subject*, and that within that *logical subject* there may be a *grammatical subject*.

Other grammars inform us that a sentence has a *complete subject* and a *simple subject*. The subject of a sentence more than likely has within it a subject noun, or its equivalent, but to talk of *grammatical subjects* and *logical subjects* is itself illogical.

"In parsing, turn attention to distinctions that correspond to actual differences of form or construction. Unless a pronoun is concerned, the gender of *horse* is as irrelevant as the size of "*colt*," says Dr. Wardlaw. Really gender in English is retained on account of the personal pronouns, *he*, *she*, and *it*. Then, why waste time giving the gender of every noun? Moreover, all nouns either have gender or are genderless, that is, nouns are naturally divided into *gender nouns* and *neuter nouns*. It is, therefore, tautological and contradictory to speak of *nouns* of the *neuter gender*.

13. Prepositions are often passed over lightly, as if unimportant or easily mastered. The fact is, they give no little trouble to any but experienced writers. The uses of *shall* and *will*, the sequence of tenses, the distinction between the restrictive and the non-restrictive clause, and the peculiar uses of the subjunctive give trouble to almost all students.

14. Do not be misled into regarding English a grammarless language. To be sure, it is not a language of concord, as is Latin or Greek, but a language of function. Always remember that you are teaching English grammar, not Latin grammar.

15. Sometimes it is difficult to determine what is good standard English. The main thing for the teacher to remember is that it is quixotic to fight good usage with the arbitrary rules of grammar.

16. Setzler's *An Introduction to Advanced English Syntax* is intended for use in the fourth year of the high school, and should be used here only. It furnishes ample work for that year, with two recitations a week. Give the time to those topics not understood by the class; do not waste time on topics already perfectly familiar to these students.

LITERATURE.

I have selected literature as the next topic of English, because I wish to relate it as closely as possible with the study of grammar. I have already said that the study of grammar and literature should never be divorced. By this it is not meant that literary study should ever degenerate into exercises in analysis and parsing. But it is meant that from the literature are to be drawn some of the best

examples in teaching analysis and parsing, and that in the study of literature there is to run through it a sub-conscious appreciation of sentence structure and word choice. Wherever the grammar of the first and second years of the high school is married closely to good literature well taught, you will find alert and enthusiastic students.

The purposes of literature in the high school are not only to introduce the student to the best in the field of letters and to give him a relish for good reading—things highly desirable in themselves, but to touch the very springs of his spiritual nature and to give them wholesome direction. In this work the high school teacher enjoys the enviable privilege of having the student during the period of adolescence, when he naturally sees visions and dreams dreams—when his emotional nature is widest awake. If a student pass through this period untouched by literary culture, it is doubtful if he ever will appreciate literature as he might.

Literature is a fine art, and it can not be measured in a retort. It is something more than knowing—it is feeling; it deals with ideals and emotions. Perhaps the teaching of no other high school subject calls for finer equipment on the part of the teacher. Not only must he have a sympathetic appreciation of literature, but a sympathetic insight to the subtle character of the youth to be taught. He must understand how to harmonize the literature and the boy. As Prof. B. E. Geer well puts it, "He must lead the class in appreciation, if he would lead it into appreciation."

For the kinds of literature suitable for high school work, and for the detailed methods of teaching literature in the high school, the teacher is referred to chapters XIII-XVI of Chubb's *The Teaching of English*, and to pages 250-282 of Carpenter, Baker & Scott's *The Teaching of English*. I venture to append a few suggestions to the teacher. Some of them will be found fully and satisfactorily discussed in the references just cited. However, some of them appear to me so important as to warrant my setting them down here:

1. Select such literature as is adapted to the age, the training, and the appreciation of your students, and such as is suited to the training and skill of the teacher. To compel a student to drone over literature beyond his comprehension is an injustice to him and prejudicial to the subject. In selecting the literature, consult his needs rather than your tastes. You can not force growth in this matter. *Hamlet*, *The Princess*, and Burke's *Speech on Conciliation*

are good literature, but to put any one of them into the first or second year of the high school would be a serious mistake. A few individuals from cultivated homes and with unusual literary training in the grades would handle these selections with more or less ease and profit, but the average eighth and ninth grade students would blunder through them without any real benefit. In this matter do not permit your ambition to outrun your judgment.

2. The College Entrance Examination Board has set for Study and Practice, during a period of four years, the following selections:

Shakespeare—*Macbeth*;
Milton—*Lycidas*, *Comus*, *L'Allegro*, *Il Penseroso*;
Burke—*Speech on Conciliation with America*, or
Washington—*Farewell Address*, and
Webster—*First Bunker Hill Oration*;
Macaulay—*Life of Johnson*, or
Carlyle—*Essay on Burns*.

It will be noted that these selections make but four groups, one for each year in the high school. These selections are adapted to high schools based upon an elementary school of eight years, and it is more than doubtful if any one of these groups can be profitably studied by eighth grade students. If not adapted to your eighth grade, there is but one sensible thing to be done—to substitute other literature of recognized merit for the Uniform Requirements.

In addition to these selections for Study and Practice, the same Board has selected a long list of standard British and American literature for Reading and Practice. The list is put into six groups, and from these groups ten selection are to be made for a four-year course.

Thus, it will be seen that a class that has used, for instance, *Macbeth* for Study and Practice, and two other selections for Reading and Practice has done a good nine months' work.

3. Every high school course in literature should contain a fair proportion of both prose and poetry. Moreover, the course should embrace all the common types of literature, such as, biography, essays, fiction, narrative and descriptive prose, lyric and dramatic poetry.

4. Much ridicule has been heaped upon the extravagances of correlation, and with some justice. Yet closely related subjects ought

to be correlated in the curriculum whenever possible. For example, the class in Roman history would find *Lays of Ancient Rome* something more than an isolated poem; Burke's *Speech on Conciliation* would be very fitting at one particular period of American history; and *Ivanhoe* would give zest to English history during the reign of the Plantagenets. If such specimens are in themselves good literature, they become more valuable when they can thus be used to lend interest to, and to draw help from, other studies.

5. What is good literature for adults may not be suitable literature for school boys and girls. A man who has never been a real boy, or a woman who has never been a romping girl, is usually ill equipped to select the reading matter for healthful, vigorous young people. Anemic literature does not appeal to young students; it must have "red blood" to attract and hold.

6. Perhaps the greatest single aid to successful literature study is regular reading aloud by both teacher and pupils. It is doubtful if genuine success can be attained without it. Reading aloud ought to be made a good part of the preparation of a piece of literature, and the greater part of the recitation should be given to it. Thirty minutes of reading aloud by a student will show more clearly his understanding of a piece of literature than could be got from him in a whole day of written examination questions about that piece.

Good reading is more than a mere accomplishment; it lies at the very bottom of all thought-getting and thought-giving. In the schools of today the child spends the greater part of the first three years of his school life being taught to read. During the next four years of his school life, so many other subjects are crowded upon him that his reading is neglected to his irreparable hurt. After visiting literally hundreds of schools, I am fully convinced that not one high school student in every ten can read more than decently, and almost none read well. What is far more unpromising, comparatively few teachers are much better readers than these high school boys and girls. For all this there is but one effective remedy—to read aloud. It requires time, and diligent, persistent, intelligent effort to become a good reader, but it is an excellent investment. A superficial study of the qualities of voice, pitch, inflection, modulation, and the like, will not make a good reader; nor will one become a good reader by simply "entering into the spirit of a selection and reading naturally." I can not refrain from quoting Dr. Hiram

Corson on this point: " 'Enter into the *spirit* of what you read, read *naturally*, and you will read well," is about the sum and substance of what Archbishop Whateley teaches on the subject, in his *Elements of Rhetoric*. Similar advice might with equal propriety be given a clumsy, stiff-jointed clodhopper in regard to dancing: 'Enter into the spirit of the dance, dance *naturally*, and you will dance well.' The more he might enter into the spirit of the dance, the more he might emphasize his stiff-jointedness and his clodhopperishness." This whole subject of reading aloud is so well set forth in Dr. Corson's little volume, *The Voice and Spiritual Education*, that I commend its careful study to every teacher of literature.

Let it be said with awful solemnity that by reading aloud is not meant school elocution. Helpless school children need the strong arm of the law to protect them against any such torture; corporal punishment is more humane. "To one who has truly appreciated it, there is nothing more dreary than the usual elocutionary rendering of a poem." Good reading does not consist in making faces, practicing frenzied gesticulations, and "cutting vocal capers."

7. One of the first elements of good reading, and one of the most trustworthy evidences of cultivated English, is a clean, clear-cut enunciation. Good pronunciation is a matter of importance, but good enunciation is imperative. Recognized pronunciations free from pedantry, and clear enunciation void of affectation always command ready attention anywhere, while uncouth pronunciations and indistinct enunciation always repel. One can not help feeling a bit low-spirited over the fortunes of good speech when he hears high school students, and not infrequently high school teachers, repeatedly saying *himsef* for *himself*, *histry* for *history*, *blieve* for *believe*, *Amarican* for *American*, and many others.

8. Careful word-study in connection with literature may be made both pleasant and profitable, but it should never be made an end in itself. The fine shades of meaning and the fine distinctions between words commonly regarded as synonymous offer excellent training in discrimination and judgment. However, a class should never be permitted to fall into the habit of quibbling over words.

9. It goes without saying that one of the principal objects of literary study is to train students in their judgment. Without such purpose the study would be colorless. However important and fascinating this work, it must be done with great care. It is difficult,

and the student is entirely without standards such as are his in the study of the natural sciences. One of the evils to be constantly avoided is the reading into a selection what its author never so much as dreamed of. Poor Shakespeare suffers untold distortions at the hands of his over zealous interpreters.

10. Prof. Geer says, "Too much emphasis can not be laid on the fact that the teaching of the history of literature in high school classes is of secondary importance." When a text in the history of literature is used in the high school, it should be used merely as a reference book. The student needs to read literature instead of reading about literature. How can a high school boy be expected to appreciate the significance of Victorian Literature, for instance, when he has never read a half dozen selections from that period, and knows but little of the history of that period?

COMPOSITION AND RHETORIC.

It is safe to assert that no other school exercise comes nearer giving a nightmare to both students and teachers than composition writing. Is it because the writing of compositions is so difficult a task? Or, is it due to a wrong notion about the purpose of composition writing and the manner in which we go about the thing? I am persuaded that we attempt to get something into the boy, when we should be getting something out of him. We find comparatively little trouble in getting pupils to talk—to tell us what they have seen and heard and think about people and things. Is not that what we wish them to do in compositions—to write what they have seen and heard and think about people and things? Then, why do we succeed so easily in the former, and fail so dismally in the latter?

In getting pupils to talk we let them express themselves just as they are accustomed to talk at home, on the playground, and in the fields—without any rules dangling over their heads. When we set pupils to writing compositions we insist on their taking some particular thing to write about, and we hedge them about with rules for paragraphs, rules for coherence, rules for clearness, rules for unity, rules for emphasis, rules for outlines—rules! rules! Is it any wonder that a kind of panic takes possession of the pupil the moment he is called upon to write a composition? Now, rules for spelling, capital letters, punctuation, and ordinary grammatical correctness do not come in this category. The strict observance of these latter

is necessary to decent writing, and must be insisted upon, if the student is ever to form habits of correct writing.

Manuals of composition are very convenient, and to untrained teachers are indispensable, but I am firm in my conviction that the misuse of them is wide-spread and always harmful. What is most desirable, and what must be done, is to get the pupil to feel at ease when putting his thoughts into writing. To achieve this he must first get accustomed to writing just as he thinks—relatively free from the restraint of rules. For years he has been hearing at least some good English, and he has certainly read some good English before he gets to the high school. He is not lacking entirely in standards, nor is he an entire stranger to composition, but he is not particularly interested in clearness, unity, and emphasis. However, when he has become accustomed to transferring his thoughts to paper, he is ready to be sent to the textbook for models and suggestions by which he may improve his work. Certainly in some measure he will succeed; let every success be recognized by the teacher and pointed out to the pupil. Success always gives inspiration. Next, point out a few of the simpler errors, and give him definite references to his text and his literature for models for correction. In making corrections and suggestions, use red ink and the blue pencil sparingly. The prodigal use of either is chilling to the young writer. Writing is what you want; correct writing will come by and by.

To learn to write with ease requires much practice; to learn to write good English with facility requires long years of unremitting practice. Textbooks are good things, but it ought to be evident to us all that droning for two or three years over rhetoric and composition books has not made either ready or accurate writers of our pupils. The process is too mechanical, and the results are too wooden. Something must be done to make composition work less repulsive and more vital. On this point Dr. J. I. McCain offers this excellent advice: "Composition should be taught in such close connection with life and with literature that what the pupil writes will be the outgrowth of his observation and experience, on the one hand, and of his studies in literature, on the other. Connecting the work with the pupil's own observation and experience will give personality and originality to it; connecting it with literature will give a wider range of thought and a better sense of form and structure."

The whole subject of composition teaching in the high school is fully discussed in chapter XVII of Chubb's *The Teaching of English*, and by G. R. Carpenter on pages 218-244 of Carpenter, Baker & Scott's *The Teaching of English*. The teacher will find many helpful suggestions in these two chapters.

1. Part III of Buehler's *Grammar with Composition* furnishes all the textbook instruction in composition needed in the first and second years of the high school. Two-year high schools need no other composition text whatever.

2. Brooks' *English Composition, Book One*, furnishes ample material for two years' work. The preface to this book says that the book was prepared to meet the needs of the first two years of the high school, meaning the 9th and 10th grades. The book was not intended to be used in the 8th grade, and to use it there would not give good results. Forty-one pages (237-278) of this book are devoted to grammar. Schools using Buehler's *Grammar* in the first and second high school years, as recommended in this manual, would do well to omit these forty-one pages in Brooks. Pupils going from Buehler to Brooks would find the order of the grammar reversed, and a difference in the terminology, both of which would be somewhat confusing to young pupils.

3. Woolley's *Handbook of Composition* may be used in both the third and fourth years with great profit. It must be used as it was intended, as a handbook for reference, and not for class recitation. To assign section after section of it for recitation will prove a failure. Instead, keep it in daily use by referring your pupils to it for specific direction in cases of doubt as to diction, sentence structure, punctuation, and other topics.

4. Do not attempt to use either Brooks or Woolley until you have mastered the preface. The preface shows how the book is to be used. The best of tools may be an utter failure, if improperly used. The special attention of teachers is called to the second full paragraph on page 5 of the preface of Brooks.

5. Teachers are cautioned against falling into error as to the composition recommended in the high school programs in this manual. Composition work is expected in every year of the high school, and in some form it will come up in almost every English recitation. It should receive some special attention at least once a week in every English class. In the third year the subject is given as *composition*

and rhetoric, and three recitations a week throughout the year are recommended.

6. But little rhetoric teaching can be done in the high school, but a little elementary rhetoric is necessary in the composition work of the third and fourth years. Whatever rhetoric work you attempt should not be taken from a college text. It is no uncommon thing for a college student, even in his sophomore year, to tell you that he used the required textbook when he was in the second or third year of the high school. In such instances someone has erred badly.

7. The proper place to learn punctuation is in the composition work. A sentence is not complete until it is properly punctuated. The sole object of punctuation is to aid in making grammatical relations clear. It is a waste of time to study a manual of punctuation apart from the actual use of punctuation.

8. Teachers of composition will be frequently and painfully reminded that most high school boys and girls are deficient in spelling. It would seem that the poor spelling of so many pupils in the high school ought to demonstrate to teachers the folly of wasting so much time spelling words that pupils never meet outside freak spelling books. Teachers compel pupils to spend months learning to spell such words as *eleemosynary*, *ippecacuanha*, *Chihuahua*, and a hundred others that they will never use and may never again see, while they come up to the high school unable to write correctly such words as *proper*, *lose*, *balance*, and a hundred others they need every day.

Payne's *Common Words Commonly Misspelled* will furnish practical spelling as far as needed in the high school. The quantity of high school spelling will depend entirely upon the needs of the classes. Spelling is an appeal to the eye rather than to the ear, but both oral and written spelling should be given. People have but little need to spell any word until they come to write it. If pupils be given a desire to spell correctly in all their written work, they will spell at least fairly well.

English spelling is not a matter of rule, but there are at least three rules of spelling which ought to be mastered by every pupil before he reaches the high school. These are (1) the rule for dropping the silent *e* at the end of a word when taking a suffix. (2) that for changing the final *y* into *i* on taking a suffix, and (3) that for doubling the final consonant on taking a suffix.

Whatever other mistakes you or your predecessor may have made in teaching spelling, do not make a greater mistake by taking a dictionary for a spelling book. This caution ought to require no argument.

Books Recommended to Teachers.

Chubb's *The Teaching of English*. Macmillan. \$1.00.

Carpenter, Baker & Scott's *The Teaching of English*. Longmans. \$1.50.

Woodward's *English in the Schools*. Heath. \$0.25.

Joynes' *Notes of Lectures on the Parts of Speech and the Study of English Grammar*. R. L. Bryan. \$0.20.

HISTORY.

More and more is the educational value of the study of history coming to be recognized and appreciated. It deserves to be ranked close to the study of the mother-tongue. There are those who readily admit that history furnishes interesting reading, but never seem to think that the subject offers a broad and rich field for systematic study. The curricula of the recent past gave to history a very insignificant part of the time spent in the secondary school and in the college. The somewhat famous Report of the Committee of Ten contains the following paragraph:

"The principal end of all education is training. In this respect history has a value different from, but in no way inferior to, that of language, mathematics, and science. The mind is chiefly developed in three ways: by cultivating the powers of discriminating observation; by strengthening the logical faculty of following an argument from point to point; and by improving the process of comparison, that is, the judgment."

Since the time at which this Report was issued (1893), history has steadily gained ground in the curricula of the high schools of America. A wider range of history is offered, more time is given to the subject, and the methods of teaching it are improving. Almost every reputable high school of four years offers at least two years of history; the best schools offer four years. Less time than four years is inadequate to secure the best results, and if the study is worth studying at all, it is worth studying extensively.

History has come to be looked upon as something more than "a record of past events." It deals with every phase of the institutional life of man—social, political, religious, intellectual, and industrial; it has to do with the whole sweep of human endeavor and human achievement. Dr. Charles DeGarmo puts it thus: "Fundamentally, history is the story of man and all that favors or hinders his progress in well-being—the influences of his environment whether natural or human that have affected him, the responses he has made to the stimuli of this environment, the institutions he has devised to fix and transmit his advances; in short, the whole account of his efforts, mishaps, failures, and successes as a social being."

History cultivates not only the judgment, but when properly taught it goes far toward forming the student's attitude of mind toward his civil rights, duties, and responsibilities. From no other source does he get a clearer view of his obligations toward the State, and enlightened patriotism. "It is impossible to look for patriotic feeling from one who is ignorant of what his country has stood for in the development of civilization." A sharp distinction must be made between emotionalism and a sincere devotion to what is best in a country's deeds and traditions. A deliberate effort to teach patriotism would defeat its own end, as would a deliberate effort to secure happiness. Patriotism is inspired by the lives of our fellows and our willingness to emulate them.

Certainly no other school subject is better fitted to cultivate the spirit of tolerance. The whole history of the human race is the story of the emancipation of man from superstition, and from intellectual, political, and personal slavery. Mathematical calculation concerning the right and the wrong of historical actions result in intolerance, since mathematics knows no caprice, personal bias, or party affiliation.

With reference to still another virtue, Dr. H. E. Bourne has this to say: "History, certainly as much as any other object of study, requires an intelligent search for truth, and the historian is obliged to follow after it through a more difficult way than even the scientist, because he must hunt among records which often contain erroneous statements or wilful distortions of what actually occurred. . . . This constant endeavor to discover truth must result in an increased respect for it, and in an habitual inclination to take some pains to know what it is."

A few have attempted to reduce history to a science or to a system of philosophy, but such efforts are destined to failure. History moves in the realm of the contingent, that is, it deals with causes and effects which do not follow the invariable order of natural law. It is for this very reason that it appeals so much to the judgment; were it otherwise, history study would be an endless chain of cold deductions of logic.

Relatively too much of written history has been confined to the monotonous recital of wars, and to the narrower political aspects, such as the opposing views of political schools, the contentions of rival leaders, the rise of political creeds, and the repudiation of mere

doctrines. All these have a place, to be sure, but not to the exclusion of more vital matters. The evolution of human society is a question far broader than mere politics, in the best sense of that term. Indeed, in the last analysis political questions are but incidental to the greater sociological ones.

At present the most important phases of history are the sociological and the industrial. Yet, until quite recently neither of these phases received more than passing attention in school textbooks. The historian, dealing with his subject from the most modern standpoint, has more to do with the evolution of society and the introduction and development of human industries than with all other elements of human achievement.

It is exceedingly unfortunate that the school histories have been so largely given over to the recital of what may be called the destructive and the barbarous in man. The kettledrum and trumpet stories are far from the best that is in man and far from the most that is in history. John Richard Green struck a high key in the preface to his *Short History of the English People*: "If I have said little of the glories of Cressy, it is because I have dwelt much on the wrongs and misery which prompted the verse of Langland and the preaching of Ball. . . . I have set Shakespeare among the heroes of the Elizabethan age, and placed the scientific inquiries of the Royal Society side by side with the victories of the New Model. If some of the conventional figures of military and political history occupy in my pages less than the space usually given them, it is because I have had to find a place for figures little heeded in common history—the figures of the missionary, the poet, the printer, the merchant, or the philosopher." The real history of a country has not been written until every agency making for its growth or retardation has been recognized.

One of the erroneous conceptions of the content of history is to regard it as a mere storehouse of facts. There can be no objection to facts properly marshaled and wisely used, but to study history for the sole purpose of getting an array of bare facts is to err in the beginning. Unrelated facts are about as useless rubbish as ever burdened a human mind; next to these come undigested facts. Certainly one must know the facts before he can understand their meaning, but the significance of the facts is the essential thing. Let it be repeated that in history we can not deduce effects from given

causes with apodictic certainty, as in mathematics, but the relations between causes and effects can usually be discerned. There is law running through it all, certainly with its variations and its deflections, but withal law. For example, we know that to the wildernesses of America came thousands of men and women from Europe during the seventeenth century. We wonder why these men and women left their native lands, their own homes, and their kindred to settle in a wilderness. We begin to look for attractions in America. In the twentieth century America attracts people from every quarter of the globe, but it was not so attractive in the earlier years of the seventeenth century. There must have been some repelling force at work in Europe. Let us go to the facts; here are some:

1. Under Henry VIII great numbers of discharged soldiers found themselves without work, and were compelled to beg. They looked to the monasteries for scanty support; Henry destroyed the monasteries, leaving the beggars without means of support.

2. In the reign of Edward VI the unenclosed lands of England were seized by the nobles and fenced in for sheep-pastures, and rents rose in many cases tenfold, thus making pauper peasants out of the small farmers.

3. After the destruction of the Spanish Armada, in the reign of Elizabeth, thousands of idle soldiers were again turned loose in England, and many of them were driven to robbery.

4. In 1601, England enacted a Poor Law which required all able-bodied men to labor for their own support. Not a few refused to work, and chose what they regarded as an easier way to support themselves, and fear of the gallows did not deter them.

5. As is frequently the case, many men of comparative wealth had lost their fortunes and wished to rebuild them.

6. The sixteenth century had aroused a spirit of daring and adventure in the people throughout Europe.

7. All Europe was chafing more or less under religious oppression.

Putting together all these facts, are we not in a position to interpret their effect upon the settlement of America?

Some writers of school histories and many teachers over-emphasize dates. Of course, some dates are important, but there are many to which there can not be attached the least value. Chronological tables are in no sense history. In learning dates the student should

let the less important dates cluster about the more important ones, just as he should let the less important events themselves cluster about the more important ones. The teacher must help the student to understand what lends importance to an event or to the date.

For instance, the purchase of Louisiana by the United States is an important event, because it began an era of territorial expansion on the part of the United States government. Suppose that two students were asked for the date of that transaction, and one were to answer by giving the date—1803, while the other, unable to give the year, were to answer by giving the circumstances surrounding the purchase and the parts played by Jefferson and Napoleon; which would have given the better answer with respect to the date? Would the latter have any difficulty in determining priority between the purchase of Louisiana and the establishment of the United States Bank in Washington's administration, though unable to give the year of either?

1. To teach history well requires considerable knowledge of the subject, a taste for it, a spirit of tolerance and patience in getting at truth, and skill in handling a class. All these are qualifications which any teacher may cultivate and ultimately possess. Time and effort will bring success. To carry to the study either indifference or prejudice will be fatal to anything like success. The student will attack the subject in the same spirit the teacher approaches it.

2. The teacher can not depend upon the textbook to do his teaching for him. The best of textbooks furnish the mere skeleton. Whatever of flesh and blood and life be given the teaching, the teacher himself must furnish. In history the teacher may succeed gloriously or fail ignominiously, almost as he elects to do. In no other high school subject has he a finer opportunity to make the recitation hour count for something large and vital, or to fritter away the time on things trivial and puerile. Should he lend an intelligent enthusiasm and a wholesome guidance to the class, and give broad and comprehensive significance to the subject, he may hope for abundant success; should he carry to the subject a lamentable ignorance fortified by prejudice, and a dulness of manner that chills the student, he may look for nothing but failure.

3. Some parallel reading is necessary to the success of history study in the high school, but care must be exercised in both the kind and the amount required. Students on entering the high school,

especially in the eighth school year, are neither mature enough nor trained enough to do very much profitable parallel reading in history. Whatever parallel reading is assigned should be very definite, and should bear directly upon the matter in hand. Do not be continually lugging in extraneous matter; such a course may indicate that you know a good deal of history, but it also indicates that you do not know much about teaching it. Parallel reading does not mean that the student should be given the same thing to be read over and over in different places or in different books. The student is seeking additional light on a given point, not repeated light. Some teachers think they are giving parallel reading when they require students to read the same thing from two or three history texts. Such a course may bewilder the student instead of enlightening him, since different texts may approach a given historical question from as many viewpoints.

As the student progresses through the high school his parallel reading may be increased. By the time he reaches the fourth year he ought to be able to handle such side lights with ease and profit.

4. No very successful history teaching can be done in the high school without at least a small reference library and a few good historical maps. The matter of a suitable reference library is too large to be discussed here. The writer would be glad to take up the matter with anyone interested in it. Teachers will find many helpful suggestions in *A History Syllabus for Secondary Schools*, prepared by a Special Committee of the New England History Teachers' Association, and published by D. C. Heath & Co.

It must be constantly borne in mind that any kind of library to be of any service whatever must be used, and that high school students are not going to use books giving dry details of military campaigns, dissertations on the science of government, and fine-spun arguments on abstruse political doctrines.

5. Good maps in the hands of a competent teacher are of the highest practical value; an incompetent teacher has no use for maps of any kind—he could not use them, if he had them. In most schools the main use of maps seems to be for decorative purposes. Historical maps to be serviceable must show the geography contemporaneous with the history. "Correct modern maps with ancient names printed on them are not only worthless but misleading." For a high school student to undertake to understand the geography of

Columbus' day from a study of a modern map of the world would be as difficult to him as to reconstruct Milton's universe.

6. Ambition unseasoned with judgment sometimes betrays a good high school teacher into having his pupils do what he is pleased to call *research work*. Research in history means the study of the material out of which history is made, and is entirely beyond the capacity of the high school boy or girl. It is not well for the high school teacher to put on university airs, and to indulge in the prodigal waste of the students' time. "Cobbler, stick to your last," is good advice to the over-ambitious anywhere.

7. In assigning work to classes for preparation, do not make the assignments by pages or paragraphs. To do so leaves the impression that one page or paragraph is as vital as another. Instead, assign by topics or sub-topics wherever it is possible. It will sometimes be found necessary to assign at one time a topic long enough for several recitations.

8. Of course, the cardinal difficulties which beset the path of every teacher of history are (1) getting at the essential elements of history, and (2) organizing, interpreting, and co-ordinating the material. These subjects are well handled in Mace's *Method in History*, pages 1-76. On the subject of organizing the material, one valuable paragraph is here given:

"Organization is, therefore, a mental process and not a mechanical one. No subject, as many teachers unfortunately think, can be organized in a notebook or on a blackboard. At best, such an arrangement of words and signs can only suggest a few of the relations and processes involved in organization. Too often systems of lines, braces, and brackets delude the mind and become a substitute for that real organization which can only take place in the thinking mind."

9. Do not waste time in drawing elaborate diagrams to be laboriously transcribed into notebooks, or in having students copy extracts from some accessible book. Whatever other pedagogical crimes the history teacher may have committed, it is to be hoped that he may never be guilty of committing either of those two unpardonable offenses—that of making a poor reading lesson out of a history recitation, and that of lecturing to high school students.

10. Above everything else bring your students to the study of history with unprejudiced and open minds, bent on finding the truth

and accepting it. No one can discern truth, unless he carry to his task sympathy and perspective. Every historical question must be viewed in its larger setting and must be viewed through sympathetic eyes.

11. Do not permit students to commit the text to memory. Be careful that your manner of conducting the recitation does not invite this error.

GREEK AND ROMAN HISTORY.

1. The best modern high school courses in history are arranged chronologically. In a four-year course, Greek and Roman history are placed in the first year, Mediæval and Modern history in the second year, English history in the third, and American history and Civics in the fourth. The State Board of Education of South Carolina has followed this order. The high schools of this State meet in the history course, as in some other courses, some difficulty arising from the fact that we make the eighth school year the first year of the high school. Botsford's *Ancient History for Beginners* will be found difficult enough for any first-year high school student, but it can be handled profitably by students properly prepared to enter that class.

2. If we are to get results worthy of the effort, the Greek and Roman history should be given daily recitations for thirty-six weeks. It will require that time to do the work, and doubtless the average teacher will wish for more time. To run through this text in a year, with three recitations a week, would be simply farcical. Part I of this book, the first forty pages, is devoted to the Orient. Oriental civilization, however valuable to the mature student, has in it but little of interest to the modern high school student of the first year, and it is recommended that these forty pages be touched very lightly or omitted.

3. Part II, pages 41-253, of Botsford deals with the Greek history, and furnishes ample material for eighteen weeks, with daily recitations. In Bourne's *The Teaching of History and Civics*, pages 202-227, the teacher will find helpful suggestions as to the purposes of teaching Greek history and what phases to emphasize. In this connection let it be said that territorial expansion and the extension of political power give to Greece a far-reaching importance, but the teacher should not let these overshadow everything else. A thorough knowledge of the geography of Greece is the first thing. The

characteristics of the people themselves, and a familiar knowledge of their wonderful advancement in letters and art constitute exceedingly important phases of Greek history. Greek mythology is always interesting to students, and is necessary to an understanding of the religious conceptions of the Greek people.

4. Part III of Botsford, pages 254-469, is given to a study of Rome, closing with the crowning of Charlemagne, 800 A. D. This gives enough work for eighteen weeks, with daily recitations. Pages 228-250 of Bourne's *The Teaching of History and Civics* are devoted to suggestions to the teacher in the history of Rome.

5. In discussing the transfer from the history of Greece to that of Rome, Bourne has this pithy paragraph:

"In teaching Roman history, there are difficulties that do not arise in teaching the history of Greece. There is so much of law and government, and these are relatively uninteresting, if not incomprehensible, to children of high school age. They find Greek history charming because of its personal character,—a series of heroic men, or a series of heroic cities almost equally personal; but much of Roman history seems taken up with a constitutional development which is hard for children to comprehend, because they are not old enough to enter deeply into political affairs, and further, because the constitutional development of Rome is so remote from the governmental notions which they may have imbibed in their daily experience."

6. At the close of each chapter in Botsford is given Short Topics for Reading. Not many of the books referred to will be accessible to the average high school pupil, and some of them would be beyond the appreciation of eighth year students.

The following books will be found helpful to students for parallel reading:

Botsford's *A History of Greece*. Macmillan.

Guerber's *Myths of Greece and Rome*. American Book Co.

Plutarch's *Parallel Lives*. Any Edition.

Plummer's *Home Life of the Ancient Greeks*.

Botsford's *Story of Rome*. Macmillan.

Preston & Dodge's *Private Life of the Romans*. Sanborn.

Botsford's text has a number of good maps, but these are too small for exclusive use. One good wall map of Greece and one of Rome are absolutely necessary to good work. Kiepert's Ancient

Greece and Ancient Rome (Rand, McNally & Co.), are among the best. In addition to these political maps, a good physical map would be very useful.

MEDIEVAL AND MODERN HISTORY.

1. Mediæval and Modern history very properly should follow the history of Greece and Rome. The Committee of Seven in its Report to the American Historical Association recommends that Mediæval and Modern History be given in the second year of a four-year course, but that these periods be omitted from a three-year course, and English history be substituted in the second year. This recommendation has been very generally accepted.

2. Second year high school students are not yet very well seasoned to difficult tasks in history, and no matter how important Mediæval history may be, it is no easy period. In its study it is necessary that the teacher should exercise considerable skill, if he is to succeed. Prof. S. J. Derrick points out five distinct features of this period to be emphasized by the teacher: "1. The general breakup of governments and society due to the fall of the Roman Empire; 2. The wonderful missionary activity and success of the Christians among the cultured but heathen Greeks and Romans as well as the barbarous and heathen Teutons; 3. The introduction of Feudalism and Chivalry, and the resultant effect in the restoration of orderly civil rule; 4. The growth of the Church as a central temporal and spiritual power; 5. The influence of these four combined factors in the formation of distinct nationalities and in the centralization of the civil government of each."

3. For a somewhat full outline of the topics to be stressed in Mediæval history and of the difficulties to be met, the teacher is referred to chapter XV of Bourne's *The Teaching of History and Civics*.

4. Myers' *Short History of Mediæval and Modern Times*, the State adopted book, furnishes abundant material for thirty-six weeks, with daily recitations, and every hour of that time will be necessary to satisfactory work. The last chapters of Botsford's *Ancient History for Beginners* and the first six chapters of Myers' *Mediæval and Modern Times* overlap, that is, Botsford brings his history down to the crowning of Charlemagne, while Myers does not reach that point until his seventh chapter. For this reason, the

first six chapters of Myers may be passed over very rapidly, if the students have already had Botsford.

5. The Modern Age, beginning with the discovery of America, is reached on page 156, chapter XIX. On an understanding of the Mediæval period depends an appreciation of the Modern period, and with most classes it will be found advisable to give not far from one-half of the year to the first eighteen chapters of the text. The Modern Age will be found much more interesting to the average class than the Middle Ages.

6. For parallel reading, books covering the Mediæval and Modern Ages are plentiful, but many of the best are heavy reading for the high school student in his second year. The most inspiring reading will come from the biographies of the leading men and women of the two periods. One-volume editions of these biographies can be had from almost any large publishing house. Larger editions are not recommended. Myers' text has a short bibliography at the close of each chapter.

Guerber's *Myths of Northern Lands*. American Book Co.

Guerber's *Legends of the Middle Ages*. American Book Co.

MacCoun's *Historical Geography Charts of Europe*. Silver, Burdett & Company.

ENGLISH HISTORY.

1. English history is given a place in the third year of a four-year course, following Mediæval and Modern history. In a three-year course, English history should be given in the second year, following the history of Greece and Rome, as already stated.

2. In a four-year history course in which the students pass from Mediæval and Modern history into English history, Montgomery's English History, the State adopted text, can be completed in thirty-six weeks, with four recitations a week. The reason for this is that the students have already studied something of English history. For classes not having studied Mediæval and Modern history, daily recitations for thirty-six weeks are recommended.

3. English history is interesting to almost all students, and the side-lights on it are numerous. Hence, no great difficulties are found in teaching at least the important phases of it. Dr. D. D. Wallace very discriminatingly recommends that the Anglo-Saxon period be passed over with very general study, and that the detailed study of the history be begun with the coming of the Normans.

Montgomery takes up the coming of the Normans with Section V, one page 56.

4. The very headings of the Sections in Montgomery indicate the order of political, social, and religious evolution from the coming of the Normans to the present day. These headings are as follows: The King *versus* the Barons, under the Norman Sovereigns; The Barons *versus* the Crown, under the Plantagenets; Baron against Baron, under Lancaster and York; Crown or Pope? under the Tudors; King or Parliament? under the Stuarts; Government by the People, under the Hanovers.

5. By the time the high school student has reached his third year he ought to be able to handle with ease and profit a considerable amount of parallel reading. Some of the most profitable books will be:

Green's *Short History of the English People*. Harper.

McCarthy's *Short History of Our Own Times*.

Cheney's *Industrial and Social History of England*. Macmillan.

Lee's *Source Book of English History*. Holt.

AMERICAN HISTORY.

1. No matter how many, or how few, years in the high school history course, American history should be placed in the last year. The reasons ought to be obvious. To the student the history of his own country is by far the most important, and he ought to study it at the time he can best understand it and appreciate it. By the time he reaches the last year in the high school, he is fully capable of getting some clear conception of the larger movements in history. Finally, there has been to him some sequence in the unfolding of these movements.

2. The State Board of Education has not adopted a high school text in American history. Thompson's History of the United States has been readopted for use below the high school, and work done in that book will no longer be given high school credit. The suggestions in this manual contemplate the use of an advanced high school text. There are fully a dozen such texts in general use in this section of the country. No matter what text is used, it will take daily recitations for thirty-six weeks to cover the subject with any degree of satisfaction.

3. The most helpful single book for the teacher of American history is Mace's *Method in History*. To "The Organization of the Periods of American History," the author gives the greater part of his book—pages 77-254. The larger divisions of this rather long chapter are: 1. Period of the Growth of Local Institutions; 2. Period of the Growth of Union; 3. Period of the Development of Nationality; 4. Nationality and Democracy; 5. Nationality and Slavery; Chapter XVIII, pages 325-352, of Bourne's *The Teaching of History and Civics* is given to the teaching of American history.

4. Anna Boynton Thompson, a very successful teacher of history, gives this excellent advice: "The history of every nation should open with the study of the Land and the People." This is particularly appropriate to the study of American history.

5. Dr. Charles W. Eliot summarizes the contributions made by America to civilization as (1) the abandonment of war for settling international disputes, (2) genuine religious toleration, (3) practical manhood suffrage, (4) fitting a variety of nations and races for joint political freedom, and (5) general material well-being among the people. If these be America's contributions to civilization, they ought to be suggestive to the teacher in the organization of his material for teaching American history.

6. The Period of Exploration is full of deeds of courage and enterprise, but in them is more of romance than of history. Give time only to such explorations as bore results.

7. Do not attempt to impress the dates of the various colonial settlements. On the other hand, the development of colonial institutions looking toward self-government is a matter of importance.

8. In connection with the Revolutionary Period, the two important things are the *causes* and the *results* of the war. The average high school student passes over this period ignorant of the real causes of that conflict, or with a very hazy conception of them. He finds it difficult to understand how the independence of the American colonists was a victory for the common people of England in their struggle against the usurpations of the crown.

9. That critical period of American history extending from the close of the Revolution to the adoption of the Constitution is tedious, but it is pregnant with important matter.

10. The military and naval events of all wars grow monotonous, and the dreary accounts of bloody battles are neither attractive nor

profitable. In the War Between the States, it is well to select one military campaign and work it out fully enough to show the unity of purpose in it, then select one battle and work out in detail the larger movements.

11. The slavery struggle and Reconstruction require close attention and clear judgment. Again I quote Dr. Wallace: "The slavery struggle should be taught consecutively, *i. e.*, topically. It should be made clear that the immediate issue was the extension or exclusion of slavery in the western territory, on whose character, both sides recognized the fate of slavery and the union were to turn. . . . Reconstruction should be taught so as to make plain the conflicting plans of the President and of Congress, with reasons for the triumph of the latter. The lessons to be drawn from the folly and bitterness of Congress are obvious, and may profitably be contrasted with the policy of Great Britain toward the conquered Boers."

12. The growth and development of industries and their effects upon other phases of institutional life need special emphasis. The domestic life and the industrial life of any people largely determine the ultimate success or failure of the nation.

13. The following books and maps are recommended:

Fiske's *Discovery of America*. Houghton, Mifflin & Co.

Fiske's *American Revolution*. Houghton, Mifflin & Co.

Fiske's *The Critical Period of American History*. Houghton, Mifflin & Co.

Hinsdale's *The Old Northwest*. Silver, Burdett & Co.

Wilson's *Division and Reunion*. Longmans.

Walker's *The Making of the Nation*. Scribners.

Bryce's *The American Commonwealth*. Macmillan.

Brigham's *Geographic Influences in American History*. Ginn.

Hart's *American History Told by Contemporaries*. Macmillan.

Hart's *Maps Illustrating American History*. Longmans.

MacCoun's *Historical Charts of the United States*. Silver, Burdett & Co.

Blackboard Outline Maps of the United States (50x70 inches).

CIVICS.

The aims in teaching civics are (1) to give to the student a working knowledge of the mechanism of government, and (2) to reveal to him some of his obligations as an individual in society. In a country where manhood suffrage prevails, as in the United States, it is of vital importance that every citizen should have an intelligent knowledge of the working of the ordinary machinery of government. Besides, citizens ignorant of their duties and obligations can not render to the State their best service. The making of good citizens, in the broadest and best sense of that term, is one of the chief functions of the school. Singing patriotic songs and floating flags over schools, however commendable in themselves, will never make good citizens. True citizenship rests upon things far more fundamental and vital than mere ceremonies. It rests upon such cardinal virtues as charity, love of truth, devotion to right, and service to one's fellow man.

While civics may be taught with profit in any year of the high school, it is decidedly best to correlate it with the American history. In fact, civics should be so closely correlated with history as to form an integral part of it. For example, the proper place for a study of the Constitution of the United States is the time of its adoption in the history study. In a half-dozen places in the American history, the teacher will find it profitable to correlate the *tariff* as discussed in the civics. Wallace's *Civil Government of the United States*, the State adopted text, is admirably adapted to such use in the last year of the high school. The teacher need have no trouble in carrying the history and civics together without neglecting either.

The teacher will find Bryce's *American Commonwealth* of much service to himself, and a book like Sanford & James' *Government in State and Nation* (Scribners), of great assistance to his students.

LATIN.

The educational value of Latin is well established in the minds of teachers and in the popular mind; it has stood the test for several centuries. There is but little danger of Latin's being undervalued, but there is danger of its being relatively overestimated. It has acquired such prestige that many teachers have come to give the subject a kind of idolatrous reverence, without ever stopping to seek any justification beyond tradition. With a few it is almost a fetish. It would be well for teachers to study the educational value of the question more carefully.

Chapter I, pages 6-49, of Bennett & Bristol's *The Teaching of Latin and Greek* is devoted to a discussion of the Justification of Latin as an Instrument of Secondary Education. Prof. Bennett says, "First and foremost, I should say Latin is of value because it confers a mastery over the resources of one's mother-tongue. This mastery comes as the direct and necessary result of careful daily translation—a process involving on the one hand a careful consideration of the analysis of the thought of the author read, and on the other hand a severe and laborious comparison of the value of alternative English words, phrases and sentences, with the consequent attainment of skill in making the same effective as vehicles of expression." In a footnote, Prof. Bennett adds that by "a mastery over the resources of one's mother-tongue" is not meant a mere understanding of the *meanings* of words, but the mastery of *ideas* of which words are but the symbols, and the assimilation of these into one's own intellectual life.

Dr. DeGarmo says, "The most obvious educational value of the ancient languages is the opportunity they give for the development of language consciousness through the long drill in making grammatical distinctions."

Prof. Eugene A. Hecker, in his little book, *The Teaching of Latin*, summarizes very succinctly on pages 1-7 the benefits and advantages of the study of Latin. With the wealth of benefits flowing from the study of Latin, there is certainly little excuse for offering in its justification such childish reasons as studying it for the history,

or such gibberish as to get from it "that indefinable somewhat" and "that subtle something."

There is no use to attempt to disguise the fact that Latin is to most students a difficult study. It requires intense and sustained effort to get out of Latin the value that is in it. However, the mere fact that it is difficult has nothing whatever to do with its value. Dismiss from your mind any such crotchet as one frequently hears—that Latin is a valuable study because it is difficult. On that ground, Chinese would be far ahead of Latin. The value of no subject is dependent upon the ease or the difficulty with which it is mastered. Undoubtedly there is such a thing as mental discipline, but mental discipline and mental gymnastics are not at all synonymous.

Because Latin is a valuable subject does not say that it is the best subject, or even a good subject, for everybody. The intense classicists have done the study of Latin incalculable harm by insisting with the spirit of martinetism that at least every boy in the high school should study it. To illustrate: Every teacher of any considerable experience knows that frequently a class of from 15 to 20 pupils is held back to the point of disgust for the subject by two or three plodding members who will never learn Latin. Prof. Bennett can not be accused of being prejudiced against Latin. Here is what he says on this point:

"At present, however, the danger seems to be not that too few will study Latin, but rather too many. Latin is a difficult subject, and the peculiar educative power it possesses is not capable of being exercised upon all minds,—only upon those of a certain natural endowment. In our intense democracy we are perhaps at times inclined to forget that no constitutional declarations of civil equality can ever make, or were ever intended to recognize, an intellectual equality between the individual members of the nation. Latin is good for those whose gifts enable them to profit by its study. It is not, however, capable of popular distribution like so much flour or sugar. Because Latin is a highly effective instrument for the training of certain minds, we must not think that the efficiency is contained in the subject *per se*; there must exist in the pupil the mental endowment requisite to profit by Latin; else the time spent upon the study is worse than wasted. Observation convinces me that many parents and pupils labour from a serious misconception on this point,

and that many are ambitious to study Latin whom nature has not endowed with the capacity to benefit by its pursuit."

Not a few teachers frankly admit that they have students taking Latin under compulsion because the school has nothing else to offer in lieu of Latin. Is it fair, or just, or even sensible to compel any student to take any subject simply because it is in the curriculum, or because the school is unable to offer anything in its stead? On the same plane of logic, were a woman to go to a store and ask for gingham, and the merchant had no gingham, she should be expected to take his only substitute—calico. I have elsewhere tried to emphasize the need of a more rational adjustment of high school courses to the students.

Some teachers insist on every high school student's taking Latin at least one year in order to test his aptitude and taste for the subject. Such a position does not seem to me a strong one. In the first place, by the time the pupil has reached the high school a discerning teacher ought to be able to discover if he has any appreciable language sense. By language sense I mean an instinctively correct use of oral and written speech. By the time the pupil reaches the high school, with any kind of careful teaching, he manifests his aptitude for language. Why should the teacher in the high school put him through another year's test to find out what the observant teacher ought to know already? In the second place, less than two years of Latin study is scarcely worth the undertaking. Is it just to the student to take one year of his time to experiment in a matter which ought to be already fully understood?

It is altogether unwise to crowd Latin into the already congested curriculum of the elementary school. The seventh year pupils of our South Carolina schools have enough to do without taxing them with Latin. To put the Latin there simply compels the pupils to prolong into the high school those studies which should be completed in the elementary school. Not only do the pupils enter the high school encumbered with this unfinished elementary work hanging over them, but they are unable to do the high school work with profit. If the pupils are drilled in the seventh grade in the analysis of sentences and the ready use of English, time will be saved by waiting for the eighth grade to begin Latin. When Latin is taken up in the high school, it should be pursued vigorously every day.

The teacher should realize that he is teaching Latin, and not English. We do not study Latin in order to learn English, however fondly we may have cherished that delusion. The idioms of the two languages are widely different, and we approach their study in different ways. To be sure, the student of any language will incidentally derive benefit from studying any cognate language. In the two he is constantly discovering similarities, parallels, and contrasts which strengthen him in his linguistic efforts, just as the study of one science aids in the study of a kindred one. But, as has already been pointed out in the section on English, the grammar of Latin and that of English are radically different.

Unless a teacher knows Latin and something of how to teach it, he is most seriously advised not to undertake it. More students are driven from Latin through the inferior teaching of it than through all other causes combined. This is true of high school and college students alike. Boys and girls with red blood in their veins do not shun Latin, or any other subject, merely because it is difficult. Literally thousands of ambitious students take special delight in the mastery of difficult tasks. All that such students ask or need is confidence in the ability, skill, and enthusiasm of their teachers. It is utterly needless to be continually telling your student of the innumerable benefits that have come to thousands who have studied Latin, and of the benefit that may come to them from Latin study. Demonstrate the benefits by your own attainments and by your superior teaching. A teacher has neither the right nor the need to ask his students to take on faith the benefits accruing from his own chosen subject.

BEGINNER'S LATIN.

As in most other things, the beginning is the most important thing in teaching Latin. Beginners should be taught by the best equipped teacher in the school. Collar & Daniell's *First Year Latin* has been adopted for use in this State. The authors have to accompany this text a Teacher's Manual of 43 pages. The first eight pages are devoted to general directions for taking up the study of Latin. The remainder of the manual gives some specific directions as to teaching each of the seventy-five Lessons of the text. Inexperienced teachers will find a close and intelligent study of this manual a helpful guide.

Chapter II, pages 50-110, of Bennett & Bristol's *The Teaching of Latin and Greek* is given to a discussion of the Beginner's Book, Pronunciation, the Inductive Method, Reading at Sight, and What Latin Reading should follow the Elementary Work. It is recommended that the teacher study this chapter carefully.

A few additional suggestions are here appended:

1. The first thirteen pages of Collar & Daniell's *First Year Latin* are devoted to the Essentials of Grammar, and the use to be made of the Essentials is discussed in the Teacher's Manual. Unless the terminology used in the Essentials agrees with that of the English grammar in use by the class, it would be well to omit the Essentials altogether.

2. After seeing it tried with signal success, I am fully convinced that it is well for the teacher to require the first two weeks of Latin study to be confined to the class recitation. During this period, do not assign lessons to be prepared in advance, and do not permit the students to carry their books from the class. By so doing, the students approach each lesson under the immediate guidance of the teacher, lose no time making blunders and correcting them, and gain confidence in their ability to master the work. For a student to realize at the end of a month that he has made actual progress without any loss of time is itself inspiring. Nothing is more discouraging to a beginner than to have a task assigned him to work out without any guidance, to spend an hour or two in honest preparation, then to be told next day that he has failed even in his understanding of what was to be done.

3. The first difficulty which confronts a beginner in Latin is the new and strange words. He must become acquainted with these words in written form and in oral speech. He must hear these strange words properly pronounced over and over by the teacher; next he must pronounce them again and again, until he feels no more embarrassment in pronouncing *columba*, *hasta*, *nauta*, and scores of others, than he has in pronouncing their English equivalents. Success is the reward of constant drill led by the teacher.

4. No more important sections are to be found in the *First Year Latin* than sections 42, 43, and 44. Drill on them until your pupils understand them thoroughly, then use them constantly. An accurate and ready knowledge of them will be needed throughout the course. For a Latin class at the end of the first year to be unable

readily to separate words into their syllables and to accent the proper syllable in each is a serious reflection on the work of the teacher.

5. Correct pronunciation in the study of Latin, as in other languages, is a matter of some weight, but the method is not a matter of grave consequence. Only adopt some method and adhere to it. The trouble with most students, and with some teachers, is they use a mongrel pronunciation. The two most common methods in use in this section of the country are the English and the Roman. The Roman is much the simpler, and has in it much to commend it practically, such as the help it gives in reading Latin verse. The Roman is rapidly displacing the English everywhere. Do not be deterred from using the Roman method by a few cheap witticisms sometimes heard from men who regard all innovations as heresies.

6. In the first year's work, the business of supreme importance is the mastery of the forms, and nothing less than their mastery can be satisfactory. Until the forms are mastered, the student is helpless. In their hurry to get their students to reading Latin, teachers too frequently neglect this indispensable drill to the undoing of their students and to their own endless annoyance. To do this work successfully requires a fund of patience, and consummate skill in keeping up the interest of the class.

In mastering the forms several things must be kept constantly before the students. Among these are (1) a ready recognition of *the base, the stem, and the terminations* of a word, (2) the English meanings of the word as indicated by its terminations, and (3) the quantity of the vowels in their terminations. "The mere learning by heart the declension of a word without its English meaning is a waste of time, and proves a stumbling block to future advancement." A student may learn to recite in a parrot-like manner the entire conjugation of *regere*, yet not be able to give instantly the English for *regit, reget, regat*. He must learn these forms, but the forms without the exact meanings will prove of little service to him.

7. The next most important business of the first year is the acquirement of a good working vocabulary. "The absolute possession of such a vocabulary is indispensable to the knowledge of any language." The words of the language—their forms and meanings—are the tools without which no work can be done. Without a mastery of forms and a vocabulary, it is impossible to read Latin. The extent of the vocabulary to be acquired before leaving the beginner's

book is a mooted question. Some authorities recommend as few as 700 words, while others recommend as high as 1,500 words. A vocabulary of 1,000 words is far in excess of what most students have on leaving the beginner's book, but that number does not seem unreasonable. Were students required to master even 800 words before leaving the beginner's book, our Latin work would be vastly improved. The extent of the vocabulary is largely dependent upon the number of subjects required in addition to the Latin.

8. By reference to the preface of Collar & Daniell, it will be seen that the completion of this book is what is reasonably expected of intelligent and industrious pupils of fourteen who have five recitations a week for a school year of thirty-eight weeks. It must be remembered that these pupils are supposed to enter school at the age of six years and to have been in school eight years when they enter the high school. It must be further remembered that usually but three other subjects are required in the same year. In our South Carolina high schools, organized as at present, it will require forty weeks, with daily 45-minute recitations to complete the Collar & Daniell, including the Selections for Reading. In the smaller high schools, with shorter recitation periods, it will require forty-five weeks to do the work thoroughly.

READING AND TRANSLATING LATIN.

1. Remember that reading Latin and translating it are two very distinct processes. One is getting at the thought of the writer in a foreign tongue; the other is turning that thought into good modern English. In getting at the thought the reader metaphrases, that is, uses literal renderings, but the translation should never be literal, unless it is at the same time idiomatic English. Here lies a strong reason for not beginning the study of Latin until the pupil has formed the habit of using fairly good English. To translate *rosa puellae est* "a rose is to the girl," or to render *venerunt qui pacem peterent* "they came who might seek peace" is worse than nonsense; it is vicious. On this point, Prof. Charles W. Bain gives this sound advice: "When the translation of connected Latin is begun, nothing but accurate and idiomatic English should be allowed. One of the great advantages from studying Latin consists in the thinking out of how a given passage of Latin may be rendered into idiomatic English, for the methods of thought of the two people are entirely

different. It is the thought, and not the words, which is to be translated, and he who renders a Latin thought into good idiomatic English has done good work. The mere slavish rendering of words from one language into another does little, if any, good."

2. Closely akin to slavish literal translations are the slipshod renderings of many Latin words, such as *fides*, *honor*, *religio*, *virtus*, *id*, and others of the same type. The first three of this list do not always mean "faith," "honor," and "religion;" the fourth rarely ever means "virtue;" and "this thing" for the fifth word is meaningless.

3. Pupils deficient in the ability to grasp the sense of a sentence in Latin fall into the evil habit of calling the Latin words one at a time, and after each giving simply the English equivalent. To illustrate, *Gallia est omnis divisa in partes tres* is thus rendered: *Gallia*—Gaul, *est*—is, *omnis*—all, *divisa*—divided, *in*—in, *partes*—parts, *tres*—three.

4. I hesitate to give here a translation written out by a high school student and accepted by his teacher on the recitation. The first of chapter 22 of Book II of Cæsar's Gallic War reads as follows: *Instructo exercitu, magis ut loci natura deiectusque collis et necessitas temporis, quam ut rei militaris ratio atque ordo postulabat, cum diversae legiones aliae alia in parte hostibus resisterent, saepibusque densissimis, etc.* The written translation reads thus: "The army having been drawn up more as the nature of the place and the slope of the hill and the necessity of the time than as the order and plan of military things demanded, since the different legions some in one part and some in another were resisting the enemy and the thick hedges having been cast down," etc. What could be more degrading to either Latin or English than such an exercise done in the name of classical study? The teacher who accepted this jargon holds a college diploma, and under the law of this State is exempt from examination. In such cases the State is permitting crimes against defenseless children in the name of enlightenment.

5. The most inspiring little work for teachers on this subject, so far as I have seen, is a pamphlet entitled *The Art of Reading Latin*, by William Gardner Hale. The plan is perfectly sane, and can be followed successfully by anyone who knows Latin.

TRANSLATING LATIN INTO ENGLISH.

1. American teachers no longer aspire to make Latin writers or speakers of their students. In the high school, teachers are content,

if their students become able to grasp readily a piece of Latin and render it into good idiomatic English. Nevertheless, the student is materially aided in getting a grasp on syntax by translating English into Latin. Especially is this true in the first year of Latin. When regular reading is taken up after the beginner's book, prose composition is usually taken up at the same time. For some years teachers have fallen away from the regular systematic study of the Latin grammar, and have emphasized the prose composition instead. Some of the best Latin authorities contend that we have lost by the change, and their contention seems well supported. For an illuminating discussion of the whole question, the teacher is referred to chapter V, pages 158-174, of *Bennett & Bristol*, already mentioned; also to pages 34-37 of Hecker's *The Teaching of Latin*.

2. It may be said with safety that one of the reasons for falling away from the systematic study of Latin grammar is the formidable size and encyclopedic character of the book itself. To put a Latin grammar of 400 pages, or more, into the hands of a high school boy is an imposition rather than an inspiration. Grammars of the size and character of *Bennett's* will do much to restore this systematic study.

FOLLOWING THE BEGINNER'S BOOK.

1. In Latin, as in all other subjects, quality far outweighs quantity. In high schools running nine and ten months, with 45-minute and 60-minute periods for recitations, based on an eight-year elementary school, and with but four required subjects a year, students can easily read the first four books of *Cæsar*, the required six orations of *Cicero*, and six books of *Vergil's Æneid* in the second, third, and fourth years of the high school. In the South Carolina high schools, under present organization, this work cannot be properly done in the time mentioned, and high school principals and teachers are earnestly advised not to attempt it.

2. After reading with care the 32 pages of the Reading Exercises in *Collar & Daniell*, teachers are advised not to go immediately into *Caesar*, but to use some easier and more attractive material from nine weeks to twelve weeks. For this purpose the *Viri Romæ* is good. These biographical sketches are far more attractive than the military annals of *Caesar*. Though *Caesar* has long been accepted as a standard, there is nothing sacred in the writings of the old Roman. In fact, high school students, especially girls (and they are

in the majority), do not care for the dry details of camps, campaigns, sieges, battles, and harangues to soldiers. Many of the best authorities recommend the use of *Nepos* to the exclusion of *Caesar*. The Latin of *Nepos* is as difficult as that of *Caesar*, but the matter is of more interest to students.

3. In the better equipped schools, after giving forty weeks to the *First Year Latin*, nine to twelve weeks to the *Viri Romae*, there are still left fully twenty weeks of the second year for *Caesar*. In this time the first book may be thoroughly handled. It must be borne in mind that the first book contains nearly four-tenths of the matter in the entire first four books. Some teachers prefer to read the second book, then the first. This seems to be chiefly a matter of taste, and to offer no distinct advantage over the plan of taking up the books in their numerical order.

4. In the first half of the third year the second and third books of *Caesar* may be read. The *Viri Romae* and the three books of *Caesar* would easily rate as four books of *Caesar*. Besides, enough time will have been spent on *Caesar*. In discussing the propriety of giving a full year to *Caesar*, Prof. Hecker asks, "Would any German teacher spend a year on the campaigns of Frederick the Great?"

5. A much mooted question arises now. What shall follow the *Caesar*? Shall it be *Cicero*, *Vergil*, or *Ovid*? Each has its advocate. On what authors to read and the order of reading them, the teacher is referred to *Hecker*, pages 45-52, 79-87, 97-101; also *Bennett & Bristol*, chapter III, pages 111-130.

6. In a four-year course it might be well to give the remaining year and a half to the three authors, a half-year to each. There is much to commend this course, for it is to be regretted that students after four years in Latin have no knowledge of any but three authors—*Cæsar*, *Cicero*, *Vergil*. *Ovid* is much easier than *Vergil*, and serves as an excellent introduction to *Vergil*.

PROSE COMPOSITION.

Pearson's *Prose Composition*, the State adopted text, is divided into three parts. "Part I (pages 7-86) contains, in graded lessons, the principal points of Latin syntax." "These lessons are designed for use at the beginning of the second year's study of Latin, thereby serving as a partial review of the first year's work and as an introduction to the composition work in connection with the prose authors

read subsequently." It will be easily seen that classes making a systematic study of Latin grammar in the second year have no need of Part I of the Pearson text.

"Part II (pages 87-174) contains short, simple English sentences based on Books I-IV of Cæsar's Gallic War." The Johnston-Sanford *Cæsar*, the State adopted text, contains 47 pages of exercises "for oral translation" into Latin based on Books I-IV of Cæsar, and 18 pages of exercises "for written translation" into Latin based on Books I-IV of Cæsar. In both instances the exercises are given by chapters corresponding to the Cæsar text. Classes using the Johnston-Sanford Cæsar have no need of Part II of the Pearson text.

"Part III presents disconnected English sentences based upon Cicero's Catiline, I-II, and connected English based upon Cicero's Catiline, III-IV, Pompey's Military Command, Archias, Marcellus, and Ligarius. There are also carefully graded exercises for general review preparatory to college entrance examinations." In it are no sentences based upon Cicero's De Imperio Cn. Pompei, the first selection in the State adopted Cicero text, D'Ooge.

LATIN GRAMMAR.

The study of the Latin grammar is usually taken up after the completion of the Beginner's Book, and in connection with the translation of connected Latin reading. Mention has already been made of the falling away from a systematic study of the grammar. Many teachers use the grammar as a reference book only. My own conviction is that the grammar should be systematically studied and learned. I do not believe that a student will ever get a comprehensive understanding of Latin syntax—the logic of the sentence structure, an appreciation of sentence sense, the value of phrase groups, and the delicate shades of meaning—without a systematic study of the Latin grammar. This subject is discussed in an excellent way on pages 134-148 of Bennett & Bristol. The teacher is earnestly recommended to read these pages.

The following books helpful to teachers have already been referred to, some of them several times:

Bennett & Bristol's *The Teaching of Latin and Greek*.

Longmans.

Hecker's *The Teaching of Latin*. Schoenhof.

Hale's *The Art of Reading Latin*. Ginn.

GREEK.

Greek, like Latin, has long been recognized as having an educational value of a high order. Much that is to be said in support of the study of Latin might be said with equal force in support of Greek. It is true that for a good many years Greek has been losing ground, but some of the reasons for the loss of ground are not altogether prejudicial to the subject. Without attempting to adduce all these reasons, two may be mentioned: first, the rapid introduction of modern sciences into the program of studies has largely displaced several of the traditional subjects, Greek among them; second, the impatience of the modern boy to get through the high school and into college or out into active life.

Greek is a more difficult subject than Latin, and calls for more maturity in the study of it. For several obvious reasons it is not thought advisable to offer Greek in a high school of fewer than four years. First, in such schools the teaching force is almost always relatively small—too small to offer Greek to the few desiring it; second, less than two years of Greek is not worth undertaking.

In the classical curriculum suggested in this manual, four periods a week are provided through two years, the third and the fourth. It is readily conceded that there ought to be five periods instead of four, but on account of the small number of students asking for Greek in the high school, it was deemed prudent to ask for but four periods.

Unless a teacher feels fully competent to teach Greek, he is earnestly advised not to undertake it. On the other hand, a competent and enthusiastic teacher can do much to put the subject on a permanent basis in any good four-year high school.

Prof. A. G. Rembert, a successful teacher of Greek, urges these teaching points: "Too much emphasis can not be placed upon vocabulary work; carry systematic vocabulary study through the second year. Insist upon accent. If the correct pronunciation of each word be learned at first and at all times required, Greek accent ceases to be a bugbear."

That part of Bennett and Bristol's *The Teaching of Latin and Greek* devoted to the latter subject embraces seven chapters, or 114 pages. These chapters cover almost every phase of teaching Greek in the secondary schools. Every teacher attempting to teach it is advised to study these chapters. Many helpful suggestions are to be found in the *Report of the Committee of Ten*.

FRENCH AND GERMAN.

Section II, pages 7-14, of the Report of the Committee of Twelve of the Modern Language Association of America (D. C. Heath & Co.) discusses the value of modern languages in secondary education. A few quotations from that report are here given:

"Aside from the general disciplinary value common to all linguistic and literary studies, the study of French and German in the secondary schools is profitable in three ways: First, as an introduction to the life and literature of France and Germany; secondly, as a preparation for intellectual pursuits that require the ability to read French and German for information; thirdly, as the foundation of an accomplishment that may become useful in business and travel. Under each of these heads a great deal might be said; but an exhaustive discussion of the several topics would swell the volume of this report beyond the limits within which it is likely to be most useful."

"The first and greatest value of the study of the modern languages must be looked for in the introduction of the learner to the life and literature of the two great peoples who, next to the English stock, have made the most important contributions to European civilization. That these literatures are as important, as worthy of study, as full of instruction for the modern man and woman as are those earlier literatures that once formed the great staple of education, is a proposition that we do not think necessary to argue, though it is sometimes denied in toto by zealous advocates of classical study. For the peculiar intellectual myopia that can see nothing new and nothing good in modern literature the only remedy is the classical hellebore."

On another phase of the value of French and German as school subjects, Dr. Edward S. Joynes gives this advice, which is in accord with the Report already quoted:

"Coming now to the question of the method of instruction, I present to you the conservative—perhaps old-fashioned—view, that the teaching of modern languages should be on the same lines as of any other language (Latin or English)—that is, for *discipline and culture*—with the single exception, that the *attainment of a correct pronunciation* should be made an indispensable feature. I will add that

no one should profess to teach a modern language who does not possess this accomplishment."

"This is not the now popular or perhaps prevailing view. Under the influence of foreign—that is, native French and German—teachers, in many schools the chief stress is now laid on speaking, with the use of the foreign language in the schoolroom, etc., etc. In this view I do not concur, for our American schools. In Europe, where to speak at least a smattering of two or three languages is important in commercial or social life, such teaching—with the necessary sacrifice of the higher ends of discipline and culture—may be defended. But not so in American schools, under our different and happier conditions. Few of our pupils will need French or German in business, and still fewer, perhaps, may travel abroad in Europe. Even for these the school can teach only the elements of conversation or writing—and for this smattering, the new 'reform' method (so-called) sacrifices, in my opinion, the higher value of the disciplinary and cultural study of the language. The chief aim and effort should be, in my opinion, in French or German as in Latin or English, to secure the highest discipline of language study, with the power to *read*, to *understand*, and to *feel* the great masterpieces of literature. The effort to teach *speaking*—impossible in the classroom—should be left, when needed, to private and personal instruction. In this way modern language becomes a noble and worthy element of true education."

The study of modern languages may be begun much earlier than the study of Greek. Nevertheless, the program of studies in this manual provides for but two years of modern languages, the third and fourth years. The main reason for this arrangement is that the high schools are as yet unable to employ the services of teachers competent to teach three- and four-year courses in French and German. But one year of any foreign language is not recommended.

MATHEMATICS.

Among the so-called practical subjects of the secondary school, mathematics ranks among the highest in the popular mind. For centuries the subject has been held in high esteem as a discipline for the young. Dr. DeGarmo comments thus: "The reason is not far to seek, for the world is so constituted that it can not be apprehended without some means for discovering and measuring its quantitative relations. In the early days of reflection, when men began to search for bottom principles in the constitution of things, it was inevitable that they should come to the ideas of number and form as necessary to the very existence of the world, for whatever fills space and time must be subject to geometrical and numerical laws."

Chapter II, pages 9-52, of Young's *The Teaching of Mathematics* is devoted to the Value of the Study of Mathematics. In discussing the facts of mathematics, the author asserts, "There is no subject, except the use of the mother-tongue, which is so intimately connected with everyday life, and so necessary to the successful conduct of affairs. Wherever we turn in these days of iron, steam, and electricity, we find that mathematics has been the pioneer and guarantees results."

No one denies the immense value of mathematics as a practical subject, yet it is apparent that the average man fails to realize how elementary is the mathematics used or needed by men of even more than moderate education, exclusive of specialists in certain vocations. Thus, mathematics is frequently overrated as a mere practical subject.

Mathematics as a mode of thought is far more valuable than as a practical subject. "Mathematics is a science of necessary conclusions." The conditions given, the conclusions are certain. However, some authorities protest against the over-valuation of mathematics as an exercise in applied logic. One of them remarks: "Among the educated classes we meet everywhere the error that mathematics is chiefly useful in education as applied logic, even if it is limited to a minimum content. This error finds its explanation in a number of circumstances, of which two are of especial importance: first, in the common ignorance of the manifoldness of mental processes, methods,

and ideas involved in secondary mathematics, and, second, in the erroneous conception of the notion of formal discipline, which does not perceive that form and content are inseparably united."

Granted that mathematics is erroneously overrated as applied logic, the abstract logic of the subject remains unchallenged, and, although the reasoning may be severe, it is also simple. "Indeed," says a recent writer, "the whole subject rests upon a half-dozen axioms and a few postulates. The solution of the most difficult problem in algebra rests primarily upon the equation and its preservation." Too, mathematics is progressive; the axioms and principles of arithmetic hold good in trigonometry; algebra takes the principles of arithmetic and generalizes them, then proceeds to widen the circle of reasoning. Abstract logic requires almost no memorizing. The formulæ constitute almost the only legitimate field for the memory.

Mathematics develops a certain kind of imagination, as in the study of geometry and architecture, but it should be remembered that the imagination of the mathematician and that of the poet are widely unlike. One is the imagination of reason, the other of feeling.

ARITHMETIC.

Considering the amount of time spent upon its study in American schools, there is no other school subject from which we get more barren results than from arithmetic. During the first three years of school life it holds a place second only to reading; during the following four years it holds a place second to nothing in point of time or attention. After seven years of study, with daily recitations, the pupil has only a vague notion of the meaning of arithmetic and its applications to the common affairs of life. The average pupil pays an exorbitant price for his meager arithmetical knowledge. Can not something be done by which we shall get larger returns from the outlay, or get the same returns from a smaller outlay?

This is not the place to discuss primary teaching, but the needed reform must begin in the elementary school and reach up into the high school. A large percentage of the best teaching is found in the elementary schools, yet much of the arithmetic work done in them suggests that the pupils are a set of either numskulls or imbeciles. Then, in the higher grades much of the work is simply jugglery with figures.

After working with elementary pupils for twenty years, I am convinced that a marvelous improvement could be wrought in the arith-

metic work by placing the proper emphasis on a few cardinal points and principles, among them the following: 1. A real appreciation of the fact that figures are but symbols; 2. The meaning of a unit and of number; 3. The proper appreciation of place value; 4. A knowledge of the meaning of a fraction; 5. The use of a few axioms; 6. The value and use of the equation; 7. A clear distinction between the *process* and the *operation* in the solution of any problem; 8. The superiority of the oral recitation.

No appeal is made for the so-called science of arithmetic, but an appeal for the rational teaching of a subject based upon logic of a simple type. Ask the average fifth grade pupil to multiply 275 by 34 and to begin by multiplying by the 3 tens. By way of answer he eyes you with some alarm as to your sanity. When you ask him to divide 10.56 by 2.3 and to give you the quotient, he blandly informs you that the quotient has in it as many decimal places as those in the dividend exceed those in the divisor. The pupil has been required to spend more time and effort in memorizing an utterly senseless rule than would have been required to get at the logical reason for the location of the decimal. Many a pupil passes beyond fractions without ever learning the force of a denominator. Only ask the average pupil just through fractions to divide one fraction by another, then listen to his explanation of his work. The work is purely mechanical and he takes the results on faith. The statement that the whole subject of mathematics rests upon a few axioms has already been made. Nevertheless, how rarely one hears an axiom mentioned in the arithmetic recitation.

Milne's *Progressive Arithmetic, Third Book*, has been adopted by the State Board of Education for use in the high school. Any class that has had reasonably good teaching below the high school ought to be prepared to take up this text at the Metric System, page 158. The time necessary to complete the book depends largely upon the capacity of the class and the amount of work required in the other subjects. In the program of studies prepared by the committee already mentioned, and offered in this manual, arithmetic has been given three 45-minute periods a week in the first year, and two periods a week in the second. This was done for two reasons: first, the pupils usually come up to the high school poorly prepared in arithmetic; second, some maturity in the pupils is desirable for the better appreciation of the more advanced arithmetic. Since a total

of but five recitations a week is provided, some teachers might prefer to give the subject five times a week during the first year. In addition to getting more maturity in the second year, there is a further objection to giving five recitations a week in the first year—the fact that five recitations in arithmetic and five in algebra would give undue prominence to pure mathematics.

From the time allotment given to arithmetic in the programs just mentioned, Mr. Evans, of the committee, dissents and makes the following minority report, which many teachers will no doubt endorse heartily:

“I find myself in accord with the report agreed upon by the Committee on High School Programs in every particular except as to the course in Arithmetic.

I am clearly of the opinion that it is not necessary to continue Arithmetic in the high school longer than a half year. Either the first half of the first year or the latter half of the fourth year is sufficient time to review the principles of the entire subject in order to fix them permanently in mind.

Instead of keeping pupils indefinitely upon principles and processes, as is now done by some schools, whenever the class has learned a principle by applying it, a new topic should be taken up without delay. It is time worse than thrown away to keep a class going over and over again a process which they have learned fairly well.”

For a full discussion of the aims in teaching arithmetic, the teacher is referred to chapters I-V, pages 1-144, of Smith's *The Teaching of Elementary Mathematics*, and to chapter XII, pages 201-256, of Young's *The Teaching of Mathematics*. The latter book deals more extendedly with matters of method and with what to emphasize and what to pass over lightly.

Suggestions.

1. Arithmetic is a branch of an exact science, and has nothing in common with the puzzle page of the newspaper. Do not waste valuable time and prostitute a science by working at mathematical puzzles, and have the courage politely to decline all challenges to do so. You may safely decline all challenges, if you are prepared to solve the legitimate problems that come in your way. The neighborhood arithmetic crank may be able to multiply a number of ten figures by another of six and at once write out the product from left to right,

but do not permit his genius to disturb your logic. The crank might find some difficulty in teaching some one else to perform his feats.

2. Above everything else your teaching should foster cogent thinking. Teachers and pupils are constantly tempted to take short cuts. Beware how you use them in teaching. Superintendent S. H. Edmunds says with proper emphasis: "In arithmetic, short-methods should always be the resultant of reason, and as such they may serve a legitimate purpose. But let no one think that a student is, or ever will be, a mathematician who makes this means an end." The school-master's business is not to teach the *six per cent. method* of reckoning interest, but to teach the principles of percentage applied to reckoning interest. After the student has mastered these principles, he may use them with propriety and profit in actual business. Once more in the words of Mr. Edmunds: "The teacher should bear in mind at all times that the prime object in teaching is the development of power."

3. Pupils should be trained to make a sharp distinction between the *process* and the *operation* in the solution of a problem. All the logical thinking in the solution of a problem is focused on the process, which consists in seeing clearly and at one view the relations of all the factors in the problem. The operation is solely a matter of making a few simple calculations in the four fundamentals of arithmetic. A student who has been well taught will not undertake any part of the operation until he has passed before his mind the whole process involved, while the poorly taught student begins by experimenting with the factors given and feeling his way toward an answer.

4. The equation is as important in arithmetic as it is in algebra. In so-called written arithmetic, the written equation is the unmistakable evidence that the student sees all the relations of the factors involved in his problem before he begins his calculations.

5. For logical work, for accurate work, for rapid work—all highly desirable,—oral recitations in arithmetic are far superior to written recitations. Enough written work is desirable and necessary to keep pupils familiar with the forms of arithmetical expression. Nothing is more conducive to slow and lifeless work than to have all arithmetic work done on blackboards or tablets. What is more dreary and uninteresting than to watch a half-dozen or more pupils, each with a different problem, scrawling their half-digested work on a blackboard? Nobody is doing any alert thinking, and there is noth-

ing to provoke it. This lifeless manner of teaching arithmetic is chiefly the outgrowth of overworked teachers attempting to conduct more than one recitation at a time, and of incompetent teachers permitting the pupils to teach themselves as best they may.

6. For the teaching of arithmetic orally, the ordinary written arithmetic text is all that is needed. On what logical ground has arithmetic been divided into two kinds? To confine the oral work to the short questions given in the oral text is to defeat in a measure one of the prime objects in all teaching, that of gaining the power to grasp and hold in the mind the relations existing between several factors in a problem. Of course, long and tedious calculations must be reduced to written form, and neatness and accuracy should be rigidly required.

7. Perhaps the chief difficulty any student has in solving his arithmetic problems is due to his inability to read a problem intelligently. Until he can grasp readily the meaning of an English sentence, his interpretation of arithmetic will be uncertain. Often the interpretation of an arithmetic problem turns upon the grammatical construction of the sentence embodying the problem.

8. Once our arithmetics were burdened with useless topics, such as *alligation* and *circulating decimals*, but modern texts have been pruned of most of such topics. However, there is, in the opinion of many practical teachers, need of further pruning. The teacher will find a brief discussion of this subject on pages 219-223 of Young's book already mentioned.

9. Very recently there has arisen in some places a demand for an arithmetic adapted to particular vocations. The laws of arithmetic, as of all other branches of mathematics, are universal and eternal. There is no need of an arithmetic prepared especially for any particular vocation; all that is necessary is to adapt the principles and laws of arithmetic to whatever vocation has need to use them. This is the business of the teacher. The teacher in the midst of an agricultural people has only to adapt the arithmetic to that people in the terms of farm life. The same would be true of the teacher in a mining section, a trucking section, or a manufacturing section. The same principles and laws run through the calculations of the farmer, the merchant, the lawyer, the day laborer, and all others. They differ only in their adaptation. The same laws of harmony run through all music, whether it be that produced by the trained choir or by the

man behind the plow ; the laws of physics are universal, but they may be adapted to build a cantilever bridge or to swing a gate. Concrete work is necessary to all good teaching in arithmetic, and the local surroundings of the school furnish the material for the concrete teaching. The country roads and lanes furnish ample opportunity to apply the teaching of linear measure, the new-ground clearings and field ditches for the teaching of cubic measure, the fields and gardens for teaching land measure, the field crops for teaching book-keeping, percentage, and interest. Other opportunities without number are offered in the vicinity of every schoolhouse.

BUSINESS METHODS.

Teller & Brown's *Business Methods* is one of the State adopted high school books. This book is intended to give to students not going beyond the high school some knowledge of ordinary business practices. The book should be offered only in the last year of any high school, unless studied in connection with commercial arithmetic in the second year. Not more than a half year need be given to it.

ALGEBRA.

What is algebra and why is it taught are two important questions. Both are discussed in chapter VII, pages 161-174, of Smith's *The Teaching of Elementary Mathematics*. Upon the answers to these questions depend the answers to three other questions—when to begin the study of algebra, how to teach it, and how long to continue it.

Accurate and comprehensive definitions are not so common as one might at first suppose. However, as Prof. Young remarks, one may without doubt know a thing when he sees it without being able to give an unassailable definition. All agree that algebra embraces the generalizations of arithmetic. The writer just mentioned sets down as the first of the special functions of algebra, "To establish more carefully and extend the theoretic processes of arithmetic." The third function he sets down is, "To develop the equation and to apply it in the solution of problems of a wide range of interest, including large classes of problems often treated in arithmetic, as well as to problems relative to geometry, to physics, and other natural sciences." It is difficult to draw the line of demarcation between arithmetic and algebra on the one hand, and between algebra and higher mathematics and the sciences on the other. Prof. Smith puts it thus:

"The child who meets the expression $2 \times (?) = 8$, in the first grade, has touched the elements of algebra. The student of algebra who is called upon to simplify

$$(2 + \sqrt{3}) \quad (2 - \sqrt{3})$$

is facing merely a problem in arithmetic."

Prof. L. T. Baker very happily says: "The successful prosecution of the subject depends much on the manner of presenting it to the beginner. It should not be introduced to the student as something new and strange. The treatment of algebra as a dissociated topic unrelated to previous number work is responsible for many of the difficulties and discouragements of the beginner. Arithmetic, algebra, and geometry should be so treated, and the transition from one to the other should be such, that the student may be made conscious of the unity of mathematics as a science. We have made one step in this direction by introducing algebraic methods into the arithmetic of the grades."

For a discussion of the typical parts of algebra, the teacher is referred to chapter VIII, pages 175-223, of Smith's *The Teaching of Elementary Mathematics*; for a discussion of the teaching of algebra, see chapter XIV, pages 292-326, of Young's *The Teaching of Mathematics*.

Suggestions.

1. In the majority of our South Carolina schools, algebra is taken up at the beginning of the eighth school year. But when arithmetic has been taught as indicated in the suggestions in this manual, especially with respect to the use of the axioms and the equation, pupils will be fairly familiar with the elemental processes in algebra by the end of the sixth year. With the proper teaching of arithmetic and the proper introduction to algebra, the latter could be taken up with propriety by the middle of the seventh year. By taking up algebra a half-year in advance of taking up Latin, students taking both these subjects would be saved the overload of taking up two new subjects at once. On the other hand, in the average school the seventh grade is overcrowded with studies to a degree that makes the addition of algebra undesirable and unwise.

2. Wells' *Algebra for Secondary Schools*, the State adopted text, contains forty-one chapters—458 pages, exclusive of the index and answers. For the convenience of those schools desiring to end the study of algebra with the completion of quadratics, the book has

been divided into Parts I and II. The division is made on reaching chapter XXIII, Variables and Limits, on page 304. The average school running nine months and giving daily recitations of 45 minutes will find enough work in Part I for the first and second years, if all the problems and examples are solved by the class. Should algebra be given the second half of the seventh year, the class by the end of the second high school year ought to reach chapter XXIX, Part II, Undetermined Coefficients.

3. From chapter XXIX to the end of Part II will be found as much advanced algebra as can be handled in the allotted time in the fourth high school year, amid the most favorable circumstances.

4. One-teacher high schools will find the first eighteen chapters of Part I (to quadratics) as much as can be done in the first and second years.

5. Teachers are advised to omit some of the theoretical discussions given in Part II, leaving them for the college course. Chapter XIV of Young's book will aid in determining which to omit. The Report of the Committee of Ten recommends the omission of the progressions, series, and logarithms.

6. Factoring has been felicitously called the multiplication table of algebra. Much constant drill in factoring is essential to its ready use. Here as in all other parts of algebra rapid oral work is desirable. The types are reviewed by Prof. Smith in his book already mentioned.

7. Almost every algebra clings to at least a few of the antiquated and worthless problems of the hare and hound type. Teachers would do well to substitute for all such, problems of more merit. Mathematical antics are not the goal of algebra study.

PLANE GEOMETRY.

"Geometry, perhaps more than any other subject of secondary school mathematics, offers opportunity for attaining all the ends of the teaching of mathematics, and hence there is less occasion to regard any one of them as specially the goal of geometry. It gives ample occasion for exact reasoning, for real induction applied to very simple data, for correlation with other work, with drawing, geography, and the physical sciences as well as with algebra, for exercise of the space intuition, for practical applications, for drill in numerical computation, for training to habits of neatness and exacti-

tude, and for the cultivation of the powers of precise thought and expression." Perhaps every successful teacher of geometry would subscribe to this statement of the practical and cultural value of geometry. Over against all this, it is but simple truth to say that geometry may be so ill taught and so ill learned as to disgust the student with all subsequent mathematical study.

Geometry is well adapted to any one of several grades of school work. Concrete geometry is now taught through the grades of the elementary school; inventional geometry is begun in the elementary school and is often carried into the high school; demonstrative geometry is commonly confined to the high school. Plane geometry in most high schools is assigned to the third year, after two years of algebra. From the nature of algebra in its relation to geometry, it is evident that plane geometry might well run parallel with algebra in the second high school year. Indeed, many of the best teachers so arrange the course in inathematics. The chief argument against this arrangement is that it prolongs the algebra study practically through the four years, if the advanced algebra is given.

Chapters X, XI and XII of Smith's *The Teaching of Elementary Mathematics* are devoted to geometry and embrace these subjects: What is geometry? General suggestions for teaching; Basis of geometry; Typical parts of geometry. Chapter XIII, pages 257-291, of Young's *The Teaching of Mathematics* is given to the teaching of geometry.

Suggestions.

1. Five books of plane geometry with a reasonable proportion of the originals can not be completed properly in less time than thirty-six weeks, with daily recitations of 45 minutes.

2. Wells' *New Plane and Solid Geometry*, the State adopted text, has a page of suggestions to teachers which should be carefully studied by the teacher in connection with the Preface.

3. See that your class begins geometry in the right way. Do not assign the first lesson and leave the students to learn it as best they can. Start by showing the students just what is to be done and how to attack the lesson. Go very slowly for several weeks. When the first theorem is reached draw the figure accurately, in geometrical terms state exactly what is given and exactly what is to be proved, give the class time to determine the beginning point in the demonstration, and see to it that they begin at that point. As the demon-

stration proceeds let the steps be set down on the board where all can see them, keep this up until the point to be proved is reached, and be sure that they recognize the goal in the proof. Next, erase the work, re-letter the figure or turn it around, and go through the demonstration without writing down anything but what was given and what was to be proved. About five theorems thus proved will give the class an intelligent start.

4. Designate each line and angle by a letter or figure. Do not waste time talking about line AB when it can be designated as line A , or angle BAC instead of angle a . On pages 105-107 of Smith's *The Teaching of Geometry* will be found some helpful suggestions about the lettering of a figure.

5. Prof. W. K. Tate makes this observation: "The pupil usually finds difficulty with his first demonstrations. Proving a theorem is a process of dropping it back on axioms and definitions. Let him see that the first theorems are difficult merely because they are so slightly removed from axioms and definitions that it is hard to make them simpler."

6. Do not permit students to memorize the demonstration of a theorem. If students are required or permitted to write out their demonstrations on the recitation, it will be difficult to keep them from memorizing them. Possibly the best geometry students are those who when given a theorem draw an accurate figure, letter it intelligently, write down on the board a correct statement of what is known, make a clear restatement of what is to be proved, then take up a pointer and proceed to show step by step what they are doing, writing down as they go each equation, until the proof is completed. In this way every member of the class is working alertly at the same thing and at the same time, and the student at the board is doing some logical thinking while on his feet.

7. Whenever possible give your geometry work a practical application. Chapters XIV-XXI of Smith's *The Teaching of Geometry* furnishes rather copious illustrations.

SOLID GEOMETRY.

1. Solid geometry is assigned to the fourth high school year. One-half year with daily recitations of 45 minutes is usually regarded as sufficient time to devote to the subject.

2. It is recommended that not all students be required to take solid geometry. There is a rather small number of high school stu-

dents who will not profit enough by its study to justify the time necessary to do the work.

TRIGONOMETRY.

It is earnestly recommended that trigonometry be not offered in a four-year high school based on a seven-year elementary school. The reasons are obvious: 1. The student going to college will find trigonometry in his college course where it can be better taught than in the high school; 2. The student not going to college needs many other subjects far more than he needs trigonometry; 3. Almost any student with high school arithmetic, algebra, solid geometry, and trigonometry to his credit has taken a course in mathematics out of all proportion to his language, science, and other courses.

Books Suggested.

Smith's *The Teaching of Elementary Mathematics*. Macmillan. \$1.00.

Smith's *The Teaching of Geometry*. Ginn. \$1.00.

Young's *The Teaching of Mathematics*. Longmans. \$1.50.

Report of the Committee of Ten. Am. Book Co. \$0.30.

SCIENCE.

Spencer places the study of natural science above that of every other subject. In his enumeration of the benefits emanating from a study of science, he emphasizes these: The preservation of human life and the enjoyment of human life depend upon a knowledge of science; a knowledge of physiology and anatomy and the laws of health preserves our lives; and in all the industries of men the sciences serve as the bases. Spencer's aims of education are usually regarded as severely utilitarian. This notion is in a measure erroneous. He states very clearly that acquirement of every kind has two values—value as *knowledge* and value as *discipline*. His contention is that science is superior to other subjects as discipline, inasmuch as we deal with things instead of words. This view is held by many men in no sense partial to the sciences.

President Eliot (*Educational Reform*, 110-111) says: "The last subject for which I claim admission to the magic circle of the liberal arts is natural science. All the subjects which the sixteenth century decided were liberal, and all the subjects which I have heretofore discussed, are studied in books; but natural science is to be studied not in books but in things. The student of languages, letters, philosophy, mathematics, history, or political economy, reads books, or listens to the words of his teacher. The student of natural science scrutinizes, touches, weighs, measures, analyzes, dissects, and watches things. By these exercises his powers of observation and judgment are trained, and he acquires the precious habit of observing the appearances, transformations, and processes of nature. Like the hunter and the artist, he has open eyes and educated judgment in seeing. He is at home in some large tract of nature's domain. Finally, he acquires the scientific method of study in the field, where that method was originally perfected."

In all this there is no attempt to prove the superiority of the sciences over other subjects. All that is desired is to secure merited recognition. The fundamental distinctions between the humanities and the natural sciences have been epitomized somewhat as follows: "The humanities deal with causes and effects due in part to subjective or psychic forces, while the natural sciences deal with causes

and effects due to mechanic and chemic forces, wholly uninfluenced by man. The mental effect of the study of natural law awakens enthusiasm, discards authority, and trusts to reason in searching for natural law." The alchemist, hunting the elixir of life and attempting to transmute the baser metals into gold, discovered natural law and became a scientist—a chemist. The astrologer, seeking signs in the heavens for his guidance in affairs earthly, discovered system and natural law and became a scientist—an astronomer.

These differences thoroughly justify the statement made in the early pages of this manual that no curriculum can be called well-balanced, unless it has in it representatives from more than one group of subjects.

Our South Carolina high schools are notably weak in their science work. Very little science is attempted, and most of what is attempted is not pursued in a scientific manner or in a scientific spirit. Our students are growing up unfamiliar with the most common phenomena all about them. Many a student with but little taste for any of the humanities has in him a latent or dormant aptitude for reading nature's book, if he but had the opportunity and the incentive. No greater mistake could be made (and it has been repeatedly made) than to brand any student dull or inferior because he does not manifest a taste or an aptitude for the languages. Two students with equal mental capacity and acumen may differ widely in their tastes, their individualities, and their dexterities. One student might manifest a decided taste and cleverness for Shakespeare, and another the same taste and cleverness for Victor Hugo. Would it be reasonable on this basis to adjudge either student superior in capacity or acumen?

It might just as well be said here that there are some otherwise strong students whose mental make-up precludes any hope of their ever becoming proficient in the natural sciences. It would be as unwise to compel every high school student to take a four-year course in science as it would be to compel every student to take four years in ancient language. When the educational world comes to recognize and admit this fundamental truth, it will mark an epoch in educational progress and adjustment.

Elementary science offers a rich field for the high school. Physiology, botany, physical geography, physics, and chemistry are all excellent subjects. The flora of the State is varied and inviting;

public health and public sanitation have become a national battle-cry; our manufacturing industries are robust infants; agriculture of all types has taken on a new meaning and interest; and new enterprises calling for the applications of scientific knowledge are being born every day. All these call for training in science and scientific methods. The execrable teaching of science by mere sciolists has done incalculable harm to the whole subject. Any science to give its full value must be taught in a scientific way. The beginning of that way is to study things, not to read about things. One of the excellences of science as an educational instrument is that it gives enthusiasm and inspiration to teacher and students alike.

PHYSIOLOGY.

From a utilitarian viewpoint, perhaps the most important science of the high school group is human physiology. "The term 'physiology' as commonly used to designate a special course of instruction in secondary schools refers to study of the human body from the combined standpoints of anatomy (structure), pure physiology (functions of organs), and hygiene (laws and conditions of health)." The subject at once appeals to every individual, since everyone is directly concerned about the structure of his body, the functions of the organs, and the laws of health. Many teachers of science link the study of high school physiology with that of zoology, and properly so. However, in this State such an arrangement is impracticable, since exceedingly few schools teach zoology. Ritchie's *Human Physiology*, the State adopted text, seems to have been prepared to meet conditions such as ours.

Physiology is placed in the first year of the high school, and teachers will find in the State adopted text ample material for 36 weeks with 45-minute recitations three times a week, or for 20 weeks with daily recitations.

Teachers are urged to treat the subject as an elementary science. Do not make out of the work a parrot-like recital of the statements made in the textbook. To do so is a waste of time and a degrading of the subject. The average high school teacher will need considerable guidance to teach physiology as a science. Chapter XII of Lloyd & Bigelow's *The Teaching of Biology* is devoted to the teaching of human physiology. On pages 465-472 will be found a discussion of the essentials of the subject, that is, the topics to be emphasized and those to be passed over lightly. In the same chapter

(XII) is a sane and dispassionate discussion of "temperance instruction," which, I am sure, will be exceedingly welcome to most teachers of physiology. Some very helpful paragraphs will be found in the Report of the Committee of Ten, pages 158-161.

Recently so much emphasis has been placed upon diseases—their origin, their effects, and the preventives, that there is some danger of making these topics extremely distasteful to young students. It is all very well to assert that young people should be taught the whole truth about diseases (and they should), but to be done effectively it must be done judiciously. The normal boy or girl in good health takes no delight or interest in a bald study of diseases; to either the subject in itself is repulsive.

The Pilz life size sexless manikin can be bought for \$13.50.

The Minder manikin, 20 inches high, can be bought for \$2.75.

BOTANY.

But a few years ago the little study given to botany was generally looked upon as an accomplishment, chiefly for girls. Since that time the subject has come to be given the dignity of a science giving both knowledge and discipline to the student. The achievements and contributions of the great Agassiz alone ought to place botany above the suggestion of being a mere accomplishment. Next in importance to the study of animal life is that of plant life. The opportunity offered by botany for genuine scientific investigation is almost limitless.

The Committee of Ten placed botany in the second year of the high school, but the subject is readily adaptable to any year in the high school. In the program of studies given in this manual, botany is given in the first year. This was done for two good reasons: first, because in the other years of the high school had to be placed other subjects of science too difficult to be given earlier; second, the material for a study of botany is so plentiful and so accessible as to make it practicable as a first-year study. Further, botany is but a continuation of the nature study given in the elementary school.

Prof. A. C. Moore has given a few of the ultimate practical objects to be attained by the student:

1. A *personal acquaintance* with a considerable number of plants belonging to all the great groups, and the ability to recognize them

at sight in their *natural environment*—not to know them merely as laboratory specimens or by textbook descriptions.

2. Some *observational* or *experimental* knowledge of the relations of plants to light, water, and soil, and their adaptation to meet varying conditions.

3. A general knowledge of the principles of plant breeding, and its bearing on agriculture and horticulture.

4. A knowledge of the main physiological facts in the life history of common plants.

5. From an economic standpoint, a knowledge of the sources of his food, clothing, shelter, and fuel, and the main botanical relations of the plants which produce them.

Chapters III-IX, pages 62-228, of Lloyd & Bigelow's *The Teaching of Biology*, treat the entire subject of teaching botany in the secondary school. The value of the study, the course of study, the methods of teaching it, and the laboratory equipment are all discussed. Further suggestions may be found on pages 151-153 of the Report of the Committee of Ten.

The lack of laboratory equipment often deters the inexperienced teacher from undertaking botany. Some equipment is absolutely necessary to effective work, but excellent work can be done with very small equipment. A students' dissecting microscope, and a students' dissecting set consisting of five instruments can be bought for \$2.50 from the Central Scientific Company, Chicago, Illinois. Each student will need this equipment. On pages 212-215 of Lloyd & Bigelow is given in detail all manner of necessary equipment and its care. It may be well to add that the high school can not do much with structural botany. That belongs to more advanced work. The thing to be remembered above all else is—study plants, not pictures and descriptions in a book.

Bailey's *Elementary Botany*, the State adopted text, gives the basis of all the work that can be done in 36 weeks, with daily recitations. Do not attempt to run through the book in less than a year.

PHYSICAL GEOGRAPHY.

To the general subject of geography the Committee of Ten in its Report gives nearly fifty pages, considerably more space than to English, French, German, and mathematics combined. Perhaps no other subject in recent years has grown more in popular favor and

with educators than physical geography. The favor with which the subject has been received has not outstripped the growth and development of the subject as a science. No better evidence of this need be offered than the numerous editions and revisions through which the various textbooks have rapidly passed. As two of three reasons for writing his third book on physical geography, only eight years after his second book, Prof. Tarr gives "the growth of the science of physical geography and the rapid advance in rank which the subject has won for itself in the schools." His third reason for writing his third book so close upon the second is equally significant—"the new ideas and new methods which have come to the author" in so short a time.

Not a few teachers complain that they find physical geography difficult to teach. The whole subject deals with things about us at all times—air, water, and earth. Most of the material lies close at hand, the phenomena are easily observed, and the practical value of the subject is easily recognized by the student. Such a subject, if properly approached, ought not to be difficult beyond any other ordinary subject. There can be but little doubt that much of the difficulty experienced by some teachers is due to the unpreparedness of the students to do the work, and the wrong approach to the subject by the teacher. Students below the second high school year are not mature enough or trained enough to undertake physical geography. When the study is begun it should be done in the scientific spirit and in the scientific way—examining specimens, making observations and comparisons, gathering data, and watching for results. A mere textbook study and textbook recitation in physical geography is inadequate, although most recent texts are well supplied with teaching helps.

The scope and purpose of physical geography are tersely stated in less than two pages of the Introductory to Tarr's *New Physical Geography*, the State adopted text. The arrangement of the book and the reasons therefor are set forth clearly in the preface. At the close of each of the nineteen sections of the text is a list of Suggestions which will serve as an excellent guide to the teacher in the matter of practical demonstrative work. The Appendixes, pages 397-441, are full of the very best aids for teacher and student.

Since physical geography has become physiography, it "is fast becoming a laboratory science." Appendix J in Tarr's text deals

with laboratory equipment. The teacher must be guided by his judgment as to what equipment he can profitably use, and by the means at his command as to what to purchase. A little equipment is essential to good work. The maps suggested in section 4 of Appendix J are among the most useful pieces of equipment. A set of physical maps, such as Rand, McNally & Company's Physical Wall Maps, are very necessary. Good stereoscopic views are valuable. Underwood & Underwood, of New York, furnish good stereoscopes at 90 cents, and good views at 10 cents to 16 cents. There ought to be one stereoscope for every four members of the class. Keeler's Relief Model (\$16.00) is a valuable piece of apparatus for teaching topography, one of the subjects difficult to teach from ordinary maps, no matter how good. The teacher should make good use of the maps and illustrations given in the text. *The Journal of Geography* (Madison, Wisconsin, \$0.90) and *The National Geographic Magazine* (Washington, D. C., \$2.50) will furnish much inspiration to the teacher.

Field work is indispensable to good geography teaching. Superintendent Frank Evans thus values it: "The faculty and habit of observation can be best cultivated by directing attention to physical phenomena occurring and the natural forces at work *now* all around us." Appendix K of Tarr's text gives some suggestions as to how to conduct field work.

A full year of 36 weeks, with daily recitations of 45 minutes, will be necessary to complete Tarr in a satisfactory manner. Skimming through the book with two or three lessons a week will prove wholly unsatisfactory.

COMMERCIAL GEOGRAPHY.

Among the newer subjects of science suitable to high school work, it is doubtful if any is superior to commercial geography. Very few of us realize the mighty influence that commerce has had upon the civilization of the world. Trade and traffic and barter are terms as familiar to man as home and family and neighbors. Cut out commerce from the world's history, much of our achievement would be barrenness. Languages would have remained mere dialects; governments would have been provincial in character and local in extent; the missionary would have knocked in vain at the doors of heathendom; and war would be the chief occupation of men today.

Supply men with the necessities of life and you win them; give them the comforts and luxuries and you refine them.

A hundred elements enter into the complex problems of commerce: the land—its position, fertility, mineral wealth, and products; the water—its situation and adaptability to commercial purposes; the climate—temperature and rainfall; man—his genius, his industry, and his constructiveness. Discovering the needs and wants of people, opening markets for goods, and establishing modes and routes of transportation are scientific problems of world-wide importance. Commercial geography is rich in both content and disciplinary value, and is well worthy of a place beside physical geography and elementary economics.

The State Board of Education has adopted Robinson's *Commercial Geography* as the high school text. It may be used in either the second or third year, preferably the third. It should be given 36 weeks, with daily recitations of 45 minutes.

PHYSICS.

The following four paragraphs were written by Prof. W. H. Morton, of Converse College:

"The dictum, 'better no instruction in physics at all, if not by the quantitative laboratory methods,' has been accepted in the recent past to the practical exclusion of the subject from high schools and academies in the South. A few words as to the propriety of introducing physics into the high schools of South Carolina, seem called for. The recommendations of the Committee of Ten and other friends of science teaching in secondary schools were designed to stimulate improvement in facilities and methods as fast as possible, not to exclude the subjects where ideal conditions were unattainable. At any rate there has been, in the past few years, a distinct reaction from the extreme view referred to and a recognition of the value of descriptive instruction. A well equipped laboratory, a specially trained teacher with ample time at his disposal, and a school schedule allowing the student four or five hours per week for the subject, is the ideal for the course in physics. In the presence of such conditions as are likely to obtain in South Carolina high schools, is it worth while to attempt the subject? Space is lacking for discussion of the matter, but the conclusion is clear, that it is not only worth while, but that there is an imperative call for the introduction of

physics. Such instruction can be given at a cost within the possibilities of any school, as will clarify and broaden the student's outlook upon nature, will inculcate the habit of observation and develop the ability to observe, and to bring the observations into line with the simple physical concepts. Valuable aid can be given to the comprehension of other subjects, and many ideas lodged which bear materially upon health, comfort, and many forms of business. These ends can be attained, if the teacher is in earnest, is friendly toward the subject, as well prepared to teach it as he is to teach other things in which he has fair success, and is willing to employ such manual skill as the average man possesses, for a few extra hours in the course of the session."

"To deprive the student of the opportunity to study physics is to cut him off from a source of culture, which our civilization is increasingly demanding of every citizen, whether he be college-bred or not, and this deprivation the student will in after years perceive and with good reason resent."

"In general, the method found to yield best results, all things considered, is to have the experiment follow the text. There should be a statement on the part of the teacher, in terms intelligible to the student, of the principle to be illustrated by the experiment, then a verification by the use of apparatus. The experiment will clear up any uncertainty in the understanding of the statement of the law or principle. Stress, in teaching mechanics, Newton's Laws until they are ineffaceably impressed. The third law will give the most difficulty. It is not always easy for the student to discover the reaction in cases in illustration. Recognize the fundamental character of inertia, energy, the principle of work."

"It will be impossible to go into detail with reference to the other branches of the subject. It should be said, however, that they offer even a more attractive field for the exercise of devoted ingenuity. Mention must be made of the fact that the poverty-hampered teacher is not without his compensations. There is such a thing as being encumbered and partly stifled by a superabundance of apparatus ready to hand. The teacher who is furnished with everything needful knows little or nothing of the joy of making things, and it is a question whether he can manipulate as successfully as he who builds from the ground up. Then, too, the teacher who contrives his own apparatus can claim more intimate fellowship with the master work-

ers and discoverers, who, for the most part, have been handicapped in like fashion."

No satisfactory work can be done in physics without some apparatus. Many of our high schools are well able and willing to provide all the apparatus necessary, and the teachers would be only too glad to get it, but just what is needed and the cost are not known. For the convenience of such schools and teachers, the Central Scientific Company, of Chicago, has prepared the following set of physics apparatus, and will furnish it complete for \$80.00 net.

PHYSICAL SET NO. 1.

Properties of Matter.		Heat.	
Meter Stick.....	\$ 30	Air Thermometer.....	\$ 17
Adhesion Disc.....	27	Compound Bar.....	95
Prince Rupert Drops.....	25	Palm Glass.....	45
Capillary Tubes.....	45	Conductometer.	35
Inertia Apparatus.....	80	Alcohol Lamp, 4 oz.....	27
		Tripod for same.....	22
	<hr/>		<hr/>
	\$2 07		\$ 2 41
Mechanics.		Magnetism.	
Collision Balls.....	\$ 3 50	Bar Magnet.....	\$ 22
Centrifugal Hoop.....	2 25	Iron Turnings.....	11
Equilibrium Tubes.....	75	Magnetic Needle.....	65
Bottle Imp and Jar.....	80	Compas, 40 m. m.....	25
Siphon.	22		<hr/>
Lift Pump.....	1 65		\$ 1 23
Force Pump.....	2 00		
Hydrometer.	45		
Barometer Tube, Cup and			
Pipette.	55		
	<hr/>		
	\$12 17		
Pneumatics.		Electricity.	
Air Pump.....	\$22 25	Friction Rod, wax.....	\$ 11
Bell Glass, 1 Gallon.....	1 10	Pith Balls, 1 dozen.....	25
Hand and Bladder Glass....	1 00	Electroscope.	70
Sheet Rubber, 1 sq. ft.....	28	Toepler-Holtz Electric Ma-	
Madgeburg Hemispheres....	4 55	chine, with attachment and	
Guinea and Feather Tube...	6 65	shocking handles and Brass	
		Chains.	24 00
		Leyden Jar, pt.....	1 25
		Discharger.	1 00
		Simple Cell.....	18
	<hr/>		<hr/>
	\$35 83		\$27 49

Sound.		Light.	
Tuning Fork.....	\$ 17	Concave and Convex Mirror..	\$ 50
Sonometer.	4 00	Kaleidoscope.	55
Violin Bow.....	80	Prism, 3 inch.....	25
	<hr/>	Demonstration Set Lenses..	1 25
	\$ 4 97	Color Tops, 1 dozen.....	90
		Iceland Spar, small.....	45
			<hr/>
			\$ 3 90

SUMMARY.

Properties of Matter.....	\$ 2 07
Mechanics.	12 17
Pneumatics.	35 83
Heat.	2 41
Magnetism.	1 23
Electricity.	27 49
Sound.	4 97
Light.	3 90
	<hr/>
	\$90 07
Less 10 per cent. Discount.....	9 01
	<hr/>
	\$81 06
Boxing.	2 25
	<hr/>
Total.	\$83 31
Price, Complete Set, as above, F. O. B. Chicago.....	\$80 00

In the program of studies physics is given in the third year, leaving the fourth for chemistry. Four-year schools not offering chemistry might do well to put physics in the fourth year instead. The State Board has adopted no textbook in physics. Millikan & Gale's *First Course in Physics* (Ginn & Co.) is suggested as an excellent one. The above set of apparatus is adapted to this text. A *List of Laboratory Experiments*, published separately, may be used in connection with the text.

Smith and Hall's *The Teaching of Chemistry and Physics* is recommended to teachers. The second half of the book, pages 233-371, is devoted to the teaching of physics in the secondary school.

CHEMISTRY.

*(Written by Dr. J. E. Mills, Consulting and Analytical Chemist,
Columbia, S. C.)*

Should chemistry be taught in the high schools? The answer is vital. That knowledge which fits a child best for life is that which enables him best to understand and to appreciate his surroundings. The training which fits a child best for life is that which trains him best to see truly, to think clearly, and to apply his knowledge.

What is chemistry? In what way does chemistry touch the life of the average man? Will a knowledge of chemistry prove of benefit to the ordinary laborer, or farmer, or mechanic, or business man? Such questions have been often asked, and my reply to the questioner is, "Name *anything* about you with which chemistry has nothing to do." It makes little difference as to the reply—cloth, paper, glass, wood, brick, the body itself, the food that we eat, and the earth upon which we walk,—chemistry teaches of the constitution of these bodies, of the way in which they are made. For the things by which we are surrounded, and we ourselves, are made up in a wonderful way from a very few simpler bodies. Just as brick, stone, wood, and mortar can be used to make a city full of houses each different from the other, so a few simpler bodies are so combined as to make all of the wonderful world with which we are in everyday contact. Surely it is interesting to know something of the things of which this wonderful world is made, and something of the way in which they are put together, and something of the changes which they undergo. For fire does not destroy wood, or coal, or oil—it merely changes them. The food we eat becomes a part of our body. Similarly, trees and plants grow because they absorb the necessary food from the soil and from the air. Some knowledge of these wonders make life broader and fuller of meaning and of pleasure. Is it right that students should be allowed to pass out of the high school and enter upon their life-work in total ignorance of the structure and changes of the entire world about them?

Chemistry in the high school should be made a wonderfully interesting study, and a study that would contribute a lasting interest to life; but this is only one phase of the subject. Each man's present life—as he lives it under the conditions of our modern civilization—has been made possible only by the knowledge of chemistry which the world has come to possess. A knowledge of chemistry has made

possible the production of iron from its ores, and every step of civilization has been dependent upon that knowledge. But that industry is only one of a hundred industries dependent upon a knowledge of chemistry for their existence or for their present perfection. The production of copper, silver, lead, tin, and zinc from their ores, and the winning of gold, are dependent upon chemical processes. The chemist explains how best to produce brick, cement, mortar, and concrete for the purposes in view. He supervises the manufacture of glass, paints, and dye stuffs. He is a necessary adjunct to the sugar refinery and the soap factory. Not alone for the material of the printing press, but for the paper and the ink as well, a debt is due the chemist. He aids the physician with his drugs and the farmer with his fertilizers. To his knowledge is largely entrusted the administration of pure food laws and the inspection of drinking water. These are only examples. Literally in a hundred ways the knowledge of the chemist touches the home life of nearly every man, woman, and child. Not all of the chemical processes involved, and the numerous others, can be taught in any given high school. But a foundation for further study can and should be laid, and some of the simpler and locally more important processes should be taught.

There is yet another way in which a knowledge of chemistry may prove directly useful in the home or in the daily lives of people. A little knowledge of chemistry enables one to understand far better, than is otherwise possible, the valuable information given in the many useful bulletins, reports, and magazine and newspaper articles on such subjects as health, hygiene, sanitation, pure and impure foods, pure and impure paints, patent medicines, fertilizers, scientific farming, insecticides, disinfectants, and wood preservatives. A little knowledge of these matters is often the means of saving many dollars and even human lives. Sometimes, too, it is useful to know how to remove a stain, or to remember that the antidote for carbolic acid is alcohol.

I have argued that chemistry has a place in the high school curriculum, because, first, it teaches the constitution and changes of the world about us, and the information adds a new interest to, and a new appreciation of, life; second, the advance in chemical knowledge is felt in a hundred ways in every home today; third, chemistry gives much specifically useful information; fourth, chemistry, if properly

taught, is one of the very best subjects to train the pupil *to see* for himself, *to think* for himself, and *to do* for himself.

Chemistry can be successfully taught in your high school, if you can provide a suitable science teacher and a proper laboratory equipment. The difficulties in the way of accomplishing this may not be so great as you have supposed.

In selecting a teacher even for so technical a subject as chemistry, the personality of the teacher counts for more than his knowledge. Granting suitable personality in the teacher, the more technical knowledge, skill, and experience he has the better, and equally important is his ability to teach. There is little more to be said. In any given case the selection of a teacher narrows down to a consideration of the special fitness of particular individuals. Rigid economy in the salaries offered results inevitably in the long run in a sacrifice of efficiency.

The laboratory equipment can be made as expensive as desired, and in many cases considerable expense is justifiable; but an expensive equipment is not an absolute necessity. If only a few dollars are available, a start can be made. Have a set of shelves and some tables made. Funnel stands and test-tube racks can be made by any carpenter. Iron rods let into the desks are excellent substitutes for retort stands. Most of the necessary chemicals cost not over ten cents a pound. Test-tubes, beakers, and funnels are very cheap. Often thirty per cent. can be saved by duty free importations requiring about three months for delivery. In short, the absolutely necessary equipment is not expensive. A poor equipment does require more time and skill on the part of the teacher. The proper adjustment of the quality and quantity of chemicals and apparatus, and the numerous details of laboratory equipment to the needs and finances of a particular school, are matters requiring some technical knowledge, and the writer of this article will be glad to render any assistance within his power in advising concerning the purchase of equipment.

The following Chemical Set has been arranged by a prominent professor of chemistry according to the latest and best textbooks, and is sold by the Central Scientific Company, Chicago. The chemicals are all placed in bottles.

Chemical Set No. 1, F. O. B. Chicago, \$13.50.

4 oz. Acid Acetic.	$\frac{1}{8}$ oz. Gun Cotton.
1 lb. Acid Hydrochloric.	$\frac{1}{4}$ oz. Iodine.
1 lb. Acid Nitric.	2 oz. Galena.
2 lbs. Acid Sulphuric.	1 oz. Lead-Acetate.
1 oz. Acid Oxalic.	1 oz. Lead Oxide (red).
1 oz. Acid Tartaric.	$\frac{1}{2}$ oz. Litmus.
2 oz. Ammonium Chloride.	4 oz. Mercury.
8 oz. Ammonium Hydrate.	12 in. Magnesium Ribbon.
1 oz. Ammonium Nitrate.	2 oz. Magnesium Sulphate.
1 oz. Ammonium Sulphide.	1 lb. Manganese Dioxide (pwd).
1 oz. Animal Charcoal.	6 in. Platinum Wire.
1 oz. Antimony.	$\frac{1}{2}$ oz. Phosphorus.
1 oz. Arsenic Trioxide.	$\frac{1}{8}$ oz. Potassium (metallic).
1 oz. Alum.	2 oz. Potassium Bichromate.
8 oz. Alcohol Methyl.	1 oz. Potassium Bromide.
1 oz. Barium Chloride.	2 oz. Potassium Chlorate.
1 oz. Barium Nitrate.	2 oz. Potassium Ferrocyanide.
2 oz. Calcium Carbonate (marble).	1 oz. Potassium Hydrate (sticks)
2 oz. Calcium Fluoride.	1 oz. Potassium Nitrate.
4 oz. Calcium Sulphate.	1 oz. Strontium Nitrate.
1 oz. Carbon Bisulphide.	4 oz. Sulphur Roll.
1 oz. Charcoal (lumps).	$\frac{1}{8}$ oz. Silver Nitrate.
2 oz. Copper Sulphate.	$\frac{1}{8}$ oz. Sodium (metallic).
2 oz. Ether.	1 oz. Sodium Biborate.
8 oz. Ferrous Sulphide.	2 oz. Sodium Carbonate.
2 oz. Ferrous Sulphate.	2 oz. Sodium Sulphate.
$\frac{1}{2}$ oz. Gall Nuts (powdered).	8 oz. Zinc for making Hydrogen.

Beakers, nest of 3 (3 to 8 oz.).
 Blow Pipe, plain, 8 inch.
 Bottle, W. M., 4 oz.
 Bottle, W. M., 8 oz.
 Corks, 1 dozen, assorted.
 Crucibles, Hessian, nest, small 5's.
 Deflagrating Spoon, iron, $\frac{1}{2}$ inch.
 Dish, Evaporating, 2 $\frac{1}{2}$ oz.
 Dish, Lead, 3 inch.
 File, Triangular, 4 inch.
 Filter Paper, 1 pkg., 4 inch.
 Flask, F. B., 4 oz.
 Flask, F. B., 8 oz.
 Funnel, glass, 2 $\frac{1}{2}$ inch.

Jar, Specie, for deflagration, qt.
 Gas Generating Flask, pint.
 Glass Tubing $\frac{1}{4}$ lb., $\frac{1}{4}$ inch.
 Graduate, conical, 60 c. c.
 Lamp, Alcohol, 4 oz.
 Mortar, Wedgewood, 2 $\frac{3}{4}$ inch.
 Pipette, long bulb, small.
 Retort, glass, plain, 4 oz.
 Rubber Tubing, 6 ft., 3-16 inch.
 Sand Bath, 4 inch.
 Test Tubes, 1 dozen, assorted.
 Test Tube Brush, sponge end.
 Test Tube Holder, wood.

The first half of Smith & Hall's *The Teaching of Chemistry and Physics* (Longmans) is devoted to teaching chemistry in the secondary school.

AGRICULTURE.

Thirty years ago nothing was more thoroughly ridiculed than "book farming" and "book farmers." Today throughout the country there is an urgent and impatient demand for the teaching of agriculture in all the schools. One extreme has given place to another. In time the happy mean will be found, but in the meantime we are in danger of wasting money, time and labor on unprofitable experiments.

I am firm in my conviction that it would be a fatal mistake for the people of this State to establish separate high schools for the teaching of agriculture. To do so would be to divorce cultural training from vocational training, instead of marrying them more closely. To establish independent agricultural high schools would mean a dual system to be supported, whereas we are not properly supporting one system. One kind of high school for one class of people and another kind for another class would be undemocratic. Our need is agricultural courses in the high schools, but not separate agricultural high schools.

Agriculture is not a science, but "an art dependent upon a great many sciences." The high school may profitably teach a number of these basic sciences, such as botany, physics, chemistry, and zoology. The botany of the farm is an adaptation of general botany; so are the physics, the chemistry, and the zoology of the farm.

The recognition of a few axiomatic truths, the strict observance of a few fundamentals, and the exercise of some judgment and initiative ought to result in teaching of permanent value to the agricultural interests of the State.

1. Any agricultural course to be effective must be set in a strong academic background. No other people need broader intellectual training, in addition to any vocational training, than do the agricultural people of today. The mere technique of farming is but a small part of the successful farmer's equipment. The modern farmer needs to be a well-educated and well-rounded business man on the farm.

2. A course in agriculture should run through three or four years of the high school, just as English and mathematics run through three or four years. To put a single book on general agriculture into a high school for a single year can not bring satisfactory results. It requires time to accomplish results worth the effort.

3. Into the high school course do not introduce the nature study as carried on in the elementary school. Students will at once recognize the fact that they are at child's work. On the other hand, do not bring down from the college course subjects which properly belong there and which can not be handled in the high school. Both these mistakes have been made in our so-called agricultural teaching.

4. It would be a great mistake to require all pupils, even in a rural agricultural community, to take the agricultural course, just as it would be a mistake to require all to take ancient languages, modern languages, or science.

5. None but competent teachers need hope to succeed in teaching a course in agriculture. A man must know English, or history, or mathematics, before he can hope to teach either. Why should he hope to teach agriculture, if unprepared? A wide-awake, intelligent teacher who knows his subjects, can see the needs and opportunities of his patrons, and can adapt his teaching to their needs has it in his power to succeed beyond question in teaching agriculture.

6. The teaching of agriculture must be carried to the farmers by means of actual demonstration. The high school with an agricultural course does not need more than a very small plot of school ground, if any, for its demonstration work. The surrounding farms should be the places for demonstration work. In this way the agriculture is carried to the farmer himself as well as to his children. Agricultural teaching not worthy of the respect and co-operation of the farmers in the neighborhood of the school is not worth spending time and money upon.

7. Not every high school with an agricultural course should direct its attention and energies toward the same thing. In one community the agricultural teaching might be focused upon trucking, in another upon dairying, in another upon poultry raising, in another upon berry growing, or whatever else the soil and the markets suggest. Remember that if an agricultural school of any type does not make the corn field, the potato patch, the hog lot, and the chicken yard pay for

their maintenance, the school is to that degree a failure, and should not continue to attempt to delude young people into taking up farm life.

Teachers contemplating the organization of high school courses in agriculture are advised to study Bricker's *The Teaching of Agriculture in the High School*. Macmillan.

STANDARD HIGH SCHOOL UNITS.

SUBJECT	TOPICS	UNITS
English	1 Higher English Grammar and Grammatical Analysis..... 2 English Composition and Rhetoric..... 3 Critical Study of Specimens of English Literature.....	1 1 2
Mathematics	1 Algebra to Quadratic Equations..... 2 Algebra—Quadratics, Progression, and Binominal Theorem..... 3 Advanced Algebra, including Permutations and Combinations, Determinants and Numerical Equations..... 4 Plane Geometry..... 5 Solid Geometry..... 6 Plane Trigonometry.....	1 1/2 1/2 1 1/2 1/2
Latin	1 Grammar and Composition, or First Book..... 2 Caesar, Book I-IV..... 3 Six Orations of Cicero..... 4 Vergil's <i>Æneid</i> , first six books..... 5 Cornelius Nepos, first fifteen Lives, or equivalent in Ovid.....	1 1 1 1 1
History	1 Greek and Roman History..... 2 Medieval and Modern History..... 3 English History..... 4 American History and Civics.....	1 1 1 1
Science	1 Physiography, with field and laboratory work..... 2 Experimental Physics..... 3 Physiology, with laboratory work..... 4 Inorganic Chemistry, with laboratory work..... 5 Botany, with laboratory work..... 6 Zoology..... 7 Commercial Geography (Robinson).....	1 1 1/2 1 1 1 1
Greek	1 Grammar and Composition..... 2 Xenophon's <i>Anabasis</i> , Books I-IV.....	1 1
German	1 Half of Elementary Grammar, and 75 pages reading..... 2 Elementary Grammar completed, and 150 pages reading.....	1 1
French	1 Half of Elementary Grammar, and 100 pages reading..... 2 Elementary Grammar completed, and 200 pages reading.....	1 1
Drawing	1 Mechanical and Projection Drawing.....	1

The minimum time in which one unit of work may be done is five weekly recitations of 40 minutes each for 36 weeks, or a minimum total of 120 hours of 60 minutes.



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